CHAPTER 2.0
PUBLIC NEEDS ASSESSMENT

2.1 INTRODUCTION

The purpose of the Public Needs Assessment is to assess the level of service being provided by existing trails and compare that to the level of demand for trails in the County of San Diego. This assessment includes surveys and community input to determine current needs. A summary of the benefits of trails, and an analysis of the county's projected population growth and its relationship to trail needs are also provided. Definitions of trail types, including general recommendations for future design guidelines, are identified. Trail Programs of other jurisdictions are also discussed. The synthesis of this information leads to recommendations for Trail Program goals and policy implementation. These goals and policies will address long-term programmatic needs and provide support for a countywide trail strategy.

2.2 SURVEYS

Surveys are important as they establish a number of parameters that are often used in defining facility needs. Trail surveys answer questions such as:

- Who uses the trails?
- How often do individuals use trails?
- Are users willing to pay for trails and associated support services?

National and state surveys begin to address the questions listed above and provide broad-based information relevant to trail planning and standards. In addition to review of existing state and national surveys, trail use surveys specific to the County of San Diego were conducted using three distinctly different methods: phone surveys, trail organization surveys, and field surveys. These methods, described and summarized in the following pages, were used to identify general user characteristics, trail satisfaction, and a range of opinions within the limited time frame of this Needs Assessment. A comparison of the results of all three surveys is found in Table 2-1.

Another survey method used to gather opinions of trail needs in the county was through summarizing participation of the community planning and sponsor groups. The level of support of each group has been determined by surveying their interest in trails. Conclusions for all surveys are explained in Section 2.2.4.

Table 2-1 Comparisons of Survey Results

	Phone Surveys	Field Surveys	Trail Organization Surveys
Number of respondents	600	100+	200+
Sample	yes	no	no
Bias	homeowner	hikers	equestrian
Type of Use			
Hiking	61%	62%	32%
Biking	15%	38%	24%
Equestrian	1%	--	42%
Hiking & Equestrian	2%	--	--
Hiking & Biking	20%	--	--
Hiking, Biking & Equestrian	1%	--	--
Other	--	--	2%
Frequency of Use			
Once a week	14%	10%	20%
More than once a week	12%	5%	50%
Twice a month	33%	11%	16%
3 or more times per month	7%	12%	9%
1 or more per year / a few times	34%	62%	--
Other	--	--	5%
Time Spent on Trail			
More than 1 hour	70%	88%	94%
30 minutes to 1 hour	25%	12%	4.5%
Less 30 minutes	5%	--	1.5%
Travel Time to Trailhead			
15 minutes or less	67%	35%	33%
16-30 minutes	17%	45%	25%
30+ minutes	16%	20%	27%
Other	--	--	15%
Preferred Trail Length			
5 miles or more	39%	59%	73%
2-4 miles	48%	39%	24%
0-1 miles	13%	2%	3%
Purpose for trail use			
Recreation/Leisure	61%	67%	55%
Health	15%	33%	38%
Transportation	1%	--	3%
Recreation/Leisure and Health	22%	--	--
Recreation/Leisure, Health, and Transportation	1%	--	--
Other	--	--	4%

2.2.1 Phone Surveys

Over 600 homeowners participated in a telephone survey that was conducted from Wednesday, January 17th to Friday, January 19th of 2001. Specific results as well as a sample of the survey questions are found in Appendix D. The surveys were conducted to identify user characteristics in terms of trail-use purpose, frequency, time spent traveling to trails, and willingness to utilize County taxpayer funds and/or the County's general fund for trail construction, maintenance and/or improvement. The purpose of the surveys was to obtain a sampling of user characteristics and public opinion. The surveys were directed specifically to homeowners throughout San Diego County (incorporated and unincorporated areas) because the question regarding funding for trails (*Should taxpayer funds and/or the general fund be used to establish trails and/or maintain and improve existing trails?*) would produce more relevant results if asked of those who pay some tax directly to the County in the form of a property tax.

The telephone survey was conducted throughout the day and into the early evening. Calls were placed proportionally to a range of age groups in each of the five County of San Diego Board of Supervisors' districts so as not to weigh the survey findings to the characteristics of any single age group in any specific location. The age groups surveyed include: 20-30 years old, 31-40 years old, 41-50 years old, 51-60 years old, and 61 years old and over. The market research firm conducting the survey indicated that the oldest and youngest brackets were most easily reached throughout the day. By placing calls in the early evening, all the age brackets were represented in the overall survey findings. The following provides a summary of the survey results.

- **Trail utilization:** 34 percent of the surveyed San Diego County homeowners indicated that they use trails. If applied to the overall population in San Diego County, this indicates that approximately one million residents use trails. 99 percent of the respondents that use trails use them for non-motorized, recreational use. 66 percent currently do not use trails. It should be noted that although the question was phrased to identify County of San Diego trail use, it is expected that a portion of respondents did not differentiate whether the trails they used were specifically within county, state, or local jurisdiction.

- **Reasons for not using trails (see also Table 2-2):** Of the respondents that DO NOT use trails, 8 percent cited that trails are too far away from their residence, 2 percent stated that access is too difficult, 3 percent were concerned for their safety, and 87 percent stated other reasons. The most common "other reasons" for not using trails included, "too old," "no time," "no interest," and "too lazy."

Table 2-2

Reasons for Not Using Trails

Reasons	Responses
Trails too far from residence	8 percent
Access too difficult	2 percent
Concern for safety	3 percent
Other reasons	87 percent

The following summarizes the response of homeowners that use trails:

- **Frequency of use:** 12 percent use trails more than once a week, 14 percent use trails once a week, 33 percent use trails once a month, 7 percent use trails twice or more per month, and 34 percent use trails one or more times a year.
- **Trail use:** 61 percent use trails for hiking, 20 percent use trails for hiking and biking, 15 percent use trails for biking, 2 percent use trails for hiking and equestrian, 1 percent use trails just for equestrian, and 1 percent use trails for hiking, biking, and equestrian.
- **Travel time to trailhead (from origination point):** The majority of respondents (67 percent) selected 15 minutes or less, 17 percent selected 30 minutes, and 16 percent selected more than 30 minutes.
- **Time spent on trail:** 70 percent answered that they spend more than 1 hour on the trail. 25 percent spend between 30 minutes and 1 hour on the trail, and only 5 percent spend less than 30 minutes on the trail.
- **Trail length:** 48 percent prefer 2-4 miles, 39 percent answered that trails 5 miles or more best suit their needs, and 13 percent answered that 0-1 mile suits their needs.
- **Purpose for trail use:** 61 percent use trails for recreation/leisure, 22 percent use trails for recreation/leisure and for health, 15 percent use trails for health, 1 percent use trails for transportation, and 1 percent use trails for recreation/leisure, health, and transportation.
- **Funding for trails:** All surveyed homeowners (trail users and non-users) were asked whether they feel taxpayer funds and/or the general fund should be used to establish new trails and/or maintain and improve existing trails. The majority of respondents (trail users and non-users) indicated yes as shown in Table 2-3 below:

Table 2-3

Phone Surveys Use of Taxpayer Funds to Establish or Improve Trails

	Yes	No	No Comment/Opinion
Users	89 percent	4 percent	7 percent
Non-Users	64 percent	17 percent	19 percent
Total	73 percent	12 percent	15 percent

Conclusions-Phone Surveys

The results of the telephone survey indicate that a significant percentage of the respondents use trails. The results also indicate that the majority of those surveyed use trails for recreation and leisure purposes. Hikers, the largest user group, tend to travel the shortest distance from their residence to the trailhead and use trails that are 2-4 miles long or longer. Those hikers and bikers that use the trails more frequently tend to travel the shortest distance from their residence to the trailhead than those that use trails infrequently. This is reinforced by the fact that 70 percent of trail users travel 15 minutes or less to a trailhead. In addition, some of the non-users stated that the trails are "too far from their residence" as their primary reason for not using the existing trails. **Proximity to the population base is an important factor to be considered in locating and planning future trails. Community-type trails are most likely to fulfill this local need for easily accessible trails. Providing more trails in close proximity to the population base may also encourage some residents who do not currently use the trails to use them in the future.**

The majority of hikers that spend more than one hour on the trail tend to use longer trails and are willing to travel farther from their residence to the trailhead. The majority of bikers tend to travel farther from their residence to the trailhead, prefer longer trails, and spend more time on the trail than hikers. This is an indication that their purpose for using the trail also includes the experience of the trail setting, such as difficulty, remoteness, open space, visual and environmental settings. **Length of trail, time on the trail, and trail experience are interrelated factors that should be considered in future planning efforts. Regional-type trails are most likely to fulfill the expressed desire for longer trails through a wider range of scenery and varied difficulty levels.**

Additionally, the majority of the homeowners surveyed (users and non-users) indicated that taxpayer funds and/or the general fund are appropriate to use to establish new trails and/or maintain and improve existing trails. As expected, a high percentage (89 percent) of the respondents that do use trails indicated that they would support using these funds for trail purposes. Surprisingly, a high percentage of non-users (64 percent) also stated that they would support using these funds for trail purposes. The overall majority of trail users and non-users indicated that taxpayer funds and/or the general fund could be used for trail purposes. **With this type of public support, it is recommended that the County of San Diego review all existing available revenue sources and pursue other funding mechanisms to ensure that adequate funding sources are available to implement the trails identified by user needs.**

2.2.2 Trail Organization Surveys

In January 2001 consultants for the County of San Diego conducted a survey of members of active Trail Organizations within San Diego County. Questionnaires were distributed through organizations and via the Internet and asked questions about the type of user and their preferences for various aspects of trail use, including length, purpose for use, and support facilities needed. Over 200 individuals representing 97 organizations responded (see Table 2-4 for types of organizations). A sample survey and specific results are found in Appendix D.

Table 2-4

Types of Trail Organizations

Type of Organization	Number of Organizations
Trails-General	9
Hike	3
Bike	7
Equestrian	37
Fitness (Ski/Track/Softball)	5
Nature / Conservation	5
Nature / Conservation (San Diego specific)	15
Rescue	4
Other / Unknown	16

Based on home zip code of the trail organization respondents, 32 percent were from Ramona, 23 percent were from San Diego, 13 percent were from Encinitas, 5 percent were from El Cajon, and less than 5 percent came from each other city or community planning area. Overall, 59% of the respondents were from the cities and 41% were from the unincorporated county.

The trail organization respondents generally prefer long loop or long linear trails and spend more than an hour on the trail. These respondents also use trails more frequently than the general public, with half of the respondents stating that they use the trails more than once a week.

It is interesting to note that the greatest number of responses to trail organization surveys came from equestrians (42 percent). This correlates with equestrians' preference in the survey for trail length, type of trail, and time spent on the trail. Although equestrians are not the largest user group overall, equestrians in San Diego County tend to be very active, well organized, and have established mechanisms for communicating trail desires. State and national surveys, as well as the other San Diego County surveys, indicate that hikers and bikers generally comprise a greater overall quantity of trail users. **Therefore, the needs of all users must be considered and**

balanced with the trail organization survey responses. Bikers, like equestrians, seek long trails while hikers often seek shorter trails or long loop trails.

In terms of satisfaction with various aspects of the trails, most respondents are pleased with the trails currently provided. 91 percent indicated that the trails meet their expectations and fulfill their needs (evidenced by "good" or "excellent" ratings). Similarly, 97 percent are satisfied with the trail setting and 86 percent are satisfied with accessibility. 94 percent of respondents rated the level of difficulty as "good or excellent," 92 percent felt the condition of the trails were "good" or "excellent," and 89 percent felt trail maintenance was either "good" or "excellent." Facilities, such as restrooms and parking lots, received slightly lower ratings but still had an overall satisfaction rate of 71 percent.

When asked to add comments about the trail system, many indicated that they were very pleased with the trail experience and the variety of trail settings found within San Diego County. **Most comments included mention of linking existing trails and forming a more cohesive trail system as the most important feature for future trails. Comments also indicate that "connectivity" is a term that many respondents are familiar with and feel should be a top priority for executing a countywide trails strategy.** This idea is equally important for addressing the linking of regional-type trails and the expansion of the existing network of community-type trails.

Responses are summarized below by topic and a sample survey and specific results are found in Appendix D.

- **Trail use:** The predominant group that responded was equestrian (42 percent), followed by Hikers (32 percent), and Bicyclists (24 percent). 2 percent answered "other".
- **Frequency of use:** 50 percent use trails more than once a week, 20 percent use trails once a week, 16 percent use trails more than twice a month, and 9 percent use trails three times or more a month. 5 percent answered "other".
- **Purpose for trail use:** 55 percent selected recreation/leisure as their main purpose for using the trails. 38 percent selected health, 3 percent selected transportation, and 4 percent answered "other".
- **Time spent on the trail:** 94 percent answered that they spend more than 1 hour on the trail. Only 1.5 percent spend less than 30 minutes on the trail, with the remaining 4.5 percent answering that they spend between 30 minutes and 1 hour on the trail.
- **Type of trail preferred:** The majority (48 percent) answered "Other" and filled in "long loop" as their preferred type of trail. 32 percent prefer long linear trails, 15 percent prefer local short loops, and 5 percent prefer short linear trails.

- **Trail length:** 73 percent answered that trails 5 miles or longer suit their needs the best. 24 percent prefer 2-4 miles and only 3 percent answered that 0-1 mile suits their needs. When asked if the length of trails used is sufficient for their needs, 61 percent responded yes, 27 percent responded no, and 11 percent responded yes and no.
- **Travel time to trailhead (from origination point):** Responses were fairly evenly distributed, with 33 percent selecting 15 minutes, 25 percent selecting 30 minutes, and 27 percent selecting more than 30 minutes. 15 percent answered "other".
- **Method of travel to trailhead:** 49 percent travel by car, 18 percent walk, 8 percent bicycle, and 25 percent answered "Other" and wrote in "Truck and Trailer."
- **Trailhead facilities:** 66 percent answered that trailheads are sufficient for their needs. When asked what other facilities would be needed, 30 percent selected restrooms, 29 percent parking, 28 percent water, and 2 percent bike racks.
- **Ratings:** When asked to rate specific categories such as accessibility, trail setting, condition, and maintenance for trails that they use, the majority responded with good or excellent ratings for all categories (see Table 2-5 below).

Table 2-5

Trail Organization Surveys Rating of Specific Categories of Trails

Category	Poor	Good	Excellent
1) Trail Maintenance	11 percent	77 percent	12 percent
2) Facilities Provided	29 percent	63 percent	8 percent
3) Condition of Trail	8 percent	80 percent	12 percent
4) Trail Setting/Environment	3 percent	52 percent	45 percent
5) Accessibility	14 percent	66 percent	20 percent
6) Expectation/Fulfills Needs	9 percent	73 percent	18 percent
7) Level of Difficulty	6 percent	77 percent	17 percent

- **User fees:** 34 percent would be willing to pay a user fee for the use of trails or for the improvement and maintenance of trails. 36 percent would not be willing, 13 percent responded that it depends on the fee.

- **Conclusions-Trail Organization Surveys:** The trail organization survey responses indicate that existing trails meet current needs of the user groups. Respondents are generally satisfied with the trails they use today, which are provided by the county, the cities, and also within state and federal lands.

  With anticipated population growth countywide, the County of San Diego can expect added demand on the trails, and the level of satisfaction with the trail system will decrease unless the existing system is improved and expanded. There will be a need to increase the quantity

of trails in some proportion that relates to the population growth. **Increasing the connectivity of the system should be a priority for the County as a way to readily increase the trail availability.**

Comments from users indicate that trail connectivity is critical. As new trails are planned, the County should look for ways to connect trails in order to expand the existing network of trails. The majority of the survey responses indicate that trail users that responded are traveling at least 30 minutes to trails and prefer longer trails (5 miles +). This is more typical of bike and equestrian groups. **This reinforces the need for a more cohesive trail system than what currently exists. Ideally this system will include more and improved trailheads so that the long-distance regional trails are more easily accessible to the residents.**

In general, hikers are the largest user group and often prefer shorter trails that are closer to their residences. Surveys were broad in scope and received more feedback relative to long-distance, regional trails. Additional future surveys should be geared more towards gathering information that focuses on the level of satisfaction from community-level trails.

2.2.3 Field Surveys

In December 2000 and February 2001, informal use observation surveys and interviews were conducted at three separate trail locations in order to identify how and why existing trails were being used and learn first hand from people using trails what they liked and disliked about them. Observations were made about trail activities, user groups, and user characteristics. Interviews involved asking about: use frequencies; distance traveled; trailhead amenities; reasons for using the trail; type of trail preferred, and ratings for various aspects of the trail.

Over 100 field interviews were conducted at three locations: Iron Mountain (SR 67 – Poway, City of Poway trail), El Capitan Reservoir (Puetz Valley Road – Alpine, County of San Diego trail), and Green Valley (SR 79 – Cuyamaca, State Park trail). The survey locations were chosen to represent three distinct trail types in terms of their relative proximity to populated areas. The Iron Mountain trail is located in much closer proximity to populated areas than the other two survey locations. The Green Valley trail is considered the most remote of the three locations, while the Puetz Valley Road trail is slightly further removed than Iron Mountain, yet not as remote as Green Valley. The purpose of the interviews was to obtain an informal sampling of user characteristics and public opinion.

Each survey was conducted on a Saturday, which allowed for an informal sampling of a range of users and age groups. Weather conditions were clear and warm, ideal for trail use at the time of each survey. Though the survey sample size was not large enough for a true random sample of trail users, results gained provide useful insights into trail user preferences and habits. The following provides a summary of the survey. Findings for the individual locations are summarized in Appendix D.

- **General residence:** 60 percent of the respondents reside in an incorporated city. 40 percent reside in an unincorporated area.
- **Trail use:** 62 percent of those interviewed were hiking, 38 percent were biking. No equestrians were observed on these selected trails.
- **Frequency of use**: 10 percent use trails once a week, 5 percent use trails more than once a week, 11 percent use trails twice a month, 12 percent use trails three times or more a month, and 62 percent use trails a few times a year.
- **Purpose for trail use:** 67 percent answered recreation/leisure for their main purpose for using the trails. 33 percent stated health as their primary purpose.
- **Time spent on the trail:** 88 percent answered that they spend more than 1 hour on the trail. 12 percent stated that they spend less than 1 hour on the trail. None of the respondents spend less than 30 minutes on the trail.
- **Type of trail preferred:** The majority (85 percent) prefer long linear trails. Ten percent prefer short linear trails and 5 percent prefer short loop trails.
- **Trail length:** 59 percent answered that trails 5 miles or longer suit their needs the best. 39 percent prefer 2-4 miles and only 2 percent answered that 0-1 mile suits their needs.
- **Length of trails:** When asked if the length of trails used is sufficient for their needs, 100 percent responded yes.
- **Travel time to trailhead (from origination point):** 45 percent of the respondents stated 30 minutes, 35 percent stated 15 minutes, and 20 percent stated more than 30 minutes.
- **Method of travel to trailhead:** 100 percent of those surveyed traveled by car.
- **Trailhead facilities:** 83 percent answered that trailheads are sufficient for their needs. When asked what other facilities would be needed, 41 percent answered water, 35 percent answered restrooms, and 24 percent answered water and restrooms.
- **Most enjoyed features of the trail:** 49 percent answered that they most enjoyed the open space, 38 percent stated scenery, 11 percent answered convenience (close to home and easy to get to), and 2 percent enjoyed the trail because it was not frequented by too many people.
- **Ratings:** When asked to rate specific categories such as accessibility, trail setting, condition, and maintenance for trails that they use, the majority responded with good or excellent ratings for all categories (see Table 2-6 below).

Table 2-6
Field Surveys Ratings of Categories of Trails

Category	No Comment	Poor	Good	Excellent
1) Trail Maintenance	7 percent	-	93 percent	-
2) Facilities Provided	26 percent	-	74 percent	-
3) Condition of Trail	-	-	100 percent	-
4) Trail Setting/Environment	-	-	54 percent	46 percent
5) Accessibility	11 percent	5 percent	79 percent	5 percent
6) Expectation/Fulfills Needs	-	-	86 percent	14 percent
7) Level of Difficulty	-	-	95 percent	5 percent

$ **Comments:** When asked for any additional comments, 92 percent of the respondents had no comments, 7 percent stated that the access road needs improvement, and 1 percent felt that telephones should be provided for emergency purposes. The 7 percent that indicated the access road needs improvement were interviewed at the Alpine location.

$ **Conclusions-Field Surveys:** The results of the field surveys indicate that user characteristics of specific trails vary based on the proximity of the trails to populated areas. The interviews showed that trail users at all locations typically stay on the trail for more than an hour at a time; however, a higher portion of users at the Iron Mountain and Puetz Valley Road trails indicated shorter use times. The results indicate that the farther a trail user travels from their residence to the trailhead, more time is likely to be spent on the trail. The surveys also demonstrate that the more remote trails are used less frequently. **This supports the need for future trails to be located in closer proximity to the population base. Community-type trails fulfill this need and are an important component of an effective trail system.**

Trail users at each of the locations cited open space as a very important reason for enjoying the trail. Green Valley State Park trail users indicated scenery as an important feature of the trail. A very low portion of Iron Mountain trail users felt that scenery was a valued feature of the trail. This is an indication that trail users of remote locations use those trails more specifically for the experience of the trail setting, such as remoteness, open space, visual and environmental settings. **It is important for the County to continue to expand the range of trail experiences available to users.**

The primary reasons stated for using trails varied based on the proximity of trails to populated areas. The closer a trail is located to user residences, the more users are inclined to

indicate health benefits as a reason for using the trail. Conversely, the more remote trails attract a higher portion of recreational users. It was also observed that the remote trails attract a higher portion of bikers, while hikers utilized the local trails more. **The County should provide increased trail opportunities close to the population base for general health and transportation benefits and because the largest user group is hikers. A range of trail locations and opportunities will continue to be in demand to satisfy the various users.**

2.2.4 Conclusions-All Surveys

The surveys indicate that trails are a form of recreation that many residents of San Diego County participate in. Typical uses range from hiking/walking to mountain biking to horseback riding with many users participating in more than one activity. As with many state and national surveys, hiking/walking is generally the most popular trail activity in San Diego County. In most cases the surveys indicate that trail users are currently satisfied with trails they use in the county. The existing level of service is acceptable to the majority of the trail users.

Other general conclusions drawn from the surveys are:

- Many residents desire long-distance trails. Completing missing segments of these long distance candidate regional trails should be a priority for the County in terms of providing the desired length and variety of trail experience to users.
- Easily accessible local/community trails are also needed as shown by the number of users who travel less than 15 minutes, and the fact that outlying trails are used less than trails that are close to the population base.
- **Therefore, the County should continue to provide and expand long distance and local/community trail systems in order to balance the varying needs of residents.**

Even with the current satisfaction with the trail system, there will be a need for additional trails in the future. As the population increases, use of the existing trail system must be dispersed among more trails in order for trails to continue to provide a positive experience to users. In addition, trails that are more readily accessible and have more options for long-distance connections will continue to increase in demand as the population grows.

These surveys are a starting point for assessing the needs of residents and should be continued in the future as a source of user input. The County should implement a periodic update of the surveys. It is recommended that the County review and update the surveys every 5 years, with the surveys occurring over a one-year period of time. It is important that future surveys consider parameters such as:

- Time of year. Surveys should span all seasons to get the most accurate depiction of trail use.
- Demographics of respondents. Variables such as age, race, and whether residents are from cities or the unincorporated county should be considered in future survey efforts.
- Input from a range of users. Surveys should target all trail users and the results should be classified by user for easy comparisons of needs and preferences.

Surveys that cover these points will give an indication of whether the County is still on target with the projected trail needs and will provide a more accurate picture of the impact of future trail planning efforts. Mail out surveys, phone surveys, and field surveys in all seasons and at various locations should be included in future survey efforts.

2.2.5 Community Level of Participation

In order to balance countywide trail needs with a desired community-based process, the County of San Diego has surveyed each Community Planning/Sponsor Group regarding interest in trails in their communities. In an effort to establish local participation and expectations for trails, the County sent out a survey letter. As draft trail maps are developed, the survey process will be an on-going and integral part of establishing community-based trails.

In October of 2000, the County sent out a letter to each Community Planning/Sponsor Group. The letter asked a series of questions regarding their level of interest in trails (see Appendix E for sample letter). The questions included:

- If the group is interested in establishing, or continuing to have, local trails within the community,
- If they already have a trails subcommittee to represent the groups' trail interests (and subcommittee contact information if applicable),
- If the community currently hosts a major cross-county trail facility such as the Pacific Crest, the Trans-County Trail, etc.,
- If these cross-county trail facilities are included in their current plan,
- Should future local trails connect to these types of trail facilities.

A subsequent letter was sent to those Community Planning/Sponsor groups interested in trails to solicit their preparation of preliminary maps. Base-maps were provided by the County using Geographical Information System (GIS) format. The groups were asked to develop two preliminary maps to assist with development of Trail System Concepts that could be included in the Trail System Assessment. Groups were asked to develop two types of maps: one map that

only included public lands and public road rights-of-way, and the another map (if desired) showing potential trail corridors crossing any lands.

The County sent trail questionnaires to 27 groups. Twenty-six were community planning or sponsor groups, and one group located in the north mountain subregion who was not represented by a sponsor group, but who formally requested a questionnaire. The responses could be divided into the following five broad categories:

$ **Four communities indicated that they were not interested in establishing, or continuing to have, local trails within their community.** The specific reasons for their lack of participation are not known, however, several expressed concerns regarding agriculture, private property, and/or a lack of knowledge about how pathways could be constructed (especially where topography is difficult). They may have decided not to participate until Board policies reveal how the County intends to address these areas of concern. Some groups also have different trail priorities such as developing parks along watercourses with the intention of developing trails within those parks at a later time.

$ **Six communities expressed interest in participating and received trail base-maps but at this time have not provided draft maps to the County.** Some groups may have no specific expectations and some may still be in the process of developing preliminary maps. In other cases, groups have not committed to proceeding expeditiously. Views and perspectives held by members of the community planning and sponsor groups are influential factors in the level and manner for which communities participate in the trails effort. During the brief period of time of this trail assessment, several groups experienced changes in membership, which resulted in changes to the group's perspective and involvement in trails.

$ **One community expressed an interest in participating but stated that they have no need for additional trails.** They feel there are currently a sufficient number of trails in their area so they are not requesting any additional trails. However, they also stated a strong desire to retain (i.e. not lose) all of their existing trails. It should be noted that this community is in close proximity to considerable trail networks on state and federal lands. Very few, if any, trails servicing these areas are County of San Diego trails.

$ **Two communities expressed interest in participating and submitted draft trail maps showing trails on public lands and public rights-of-way only.** These groups realized that the maps are only preliminary and conceptual but preferred to exclude trails on private property stating that their official position is that they will only consider trails on private land if landowners are willing to voluntarily participate. In addition, trail subcommittee and

planning group members expressed hesitancy to include trails across private lands until the County sufficiently addresses issues related to trail acquisition/compensation, agriculture, liability, and the construction of pathways - especially where topography and existing utilities make it difficult.

- **Fourteen communities expressed interest in participating and submitted draft trail maps illustrating trails on both public and private lands.** While several trail subcommittee and planning group members verbally expressed hesitancy to include trails across private lands, it is clear that many communities envision very extensive trail systems affecting both public and private lands.

Conclusions-Community Level of Participation

In general there was a broad level of participation and support for trails expressed by the Community Planning/Sponsor Groups. Of the 26 Community Planning/Sponsor Groups surveyed, 22 indicated at least some level of interest in local trails. Figures 2-1 and 2-2 highlight the groups that expressed an interest in establishing, or continuing to have, local trails within their community.

The expectations of the Community Planning/Sponsor Groups were varied but a majority of the groups confirm a need for community trails. The submitted maps also indicate a desire to maintain or expand trails within their communities. Many maps include extensive local trail systems, which confirms the need to provide additional community trails. See section 2.4.3 for additional discussion of the participation of Community Planning/Sponsor Groups.

2.3 TRAIL BENEFITS

Trail benefits are widely discussed and accepted yet difficult to precisely quantify. Most studies find that trails offer a range of recreation, transportation, economic, environmental, educational, and health benefits. Trails can help increase pedestrian safety, reduce air pollution, and overall dramatically enhance the quality of life that residents and visitors experience in San Diego County. These benefits all support the Board's finding that the County of San Diego should provide trails as a form of public recreation (outside of existing county parks and county road rights-of-way). While it is an important aspect of trail usage for many people, the benefits actually go far beyond recreation. Both general and specific benefits are discussed below.

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Figure 2-1 Participating Community Planning Groups (8 ½ x 11)

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Figure 2-2 Participating Sponsor Groups (8 ½ x 11)

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2.3.1 National and State Surveys

Many sources confirm the benefits and desirability of trails in communities. Conclusions drawn from state and national surveys that are relevant to trails in the county of San Diego are:

$ In 1996, the typical Californian went walking on an average of 74.3 days/year. Walking enjoys the highest participation rate of the 43 outdoor recreation activities surveyed with a participation rate of nearly 85 percent. Trail hiking (58 percent participation) and jogging/running (28.6 percent participation rate) were ranked 8th and 18th in popularity out of all of the responses. Mountain biking was ranked 27th with a 17.7 percent participation rate and horseback riding was ranked 32nd with a 14.2 percent participation rate. Walking and trail hiking also rank high in latent demand and in general willingness to pay through an index comparing all 43 activities. Regarding changing attitudes for park and recreation facilities, 76 percent of Californians surveyed approve of developing more horseback riding, hiking, and/or mountain biking areas where no motorized vehicles are allowed (State of California, Planning and Local Services section, Department of Parks and Recreation 1997).

$ Seventy percent of California recreation takes place close to home, within an hour's drive of the residence. The effects of an aging population in California will cause the greatest growth rate in non-strenuous outdoor activities such as walking. Consistent patterns of leisure behavior were found among all groups within California regardless of ethnicity, economic status, age, or disability. In every special population there is a strong desire for outdoor, nature-oriented activities (State of California, The Resources Agency, Department of Parks and Recreation 1983).

$ When asked about various factors that contribute to quality of life and overall health, 57 percent of Californians (and 60 percent of San Diego/Orange County residents surveyed) believe that good recreation and associated facilities contribute a good deal to their overall health. This is an increase from 53 percent in 1996, and implies that recreation facilities will continue to be a priority within the State (California Center for Health Improvement/The Field Institute 2001).

$ American Lives, Inc., a market research firm located in Oakland CA, published *Community Preferences* in February 1999. The report presents the results of a survey of recent homebuyers in Florida, California, Texas and Colorado. The survey, conducted in 1998, was a follow-up to their previous surveys conducted in 1994 and 1995, and the results of the three studies determined consumer preferences for features and amenities in their neighborhoods. The studies found that natural open space, sidewalks, and walking and biking paths/trails are

considered at the top of the list of desirable community features regardless of the type of home (new and resale) or what kind of community (both master planned and not). Two-thirds of homebuyers specifically stated that they want walking and hiking paths/trails and natural open space, rating them as very important or extremely important. Other desirable features are preservation of historic sites, interesting small parks, and wilderness areas. Trail networks are compatible with all of these features and can be the mechanism to provide many of these amenities (American Lives, Inc. 1999).

$ A Harris Poll conducted in December 1991 found that 46 percent of American adults age 18 or above had bicycled within the past year and that 73 percent of adults had walked outdoors specifically for exercise. According to a National Sporting Goods Associations survey, exercise walking drew 71.3 million participants in 1990, making it one of the fastest growing participant sports. Replacing automobile trips with bicycling and walking trips would yield environmental benefits relative to air quality and significant health benefits in terms of reducing the risk of coronary heart disease, stroke, and other chronic diseases (U.S. Department of Transportation, Federal Highway Administration 1994).

$ A report on livable communities states that green infrastructure is our nation's natural life support system. It consists of the interconnected network of watersheds, forests, wildlife habitats, greenways, parks, working farms, parkways, and other connected open spaces that sustain and ensure quality of life when incorporated into local and regional plans, policies, and practices. These planned networks of open spaces link urban settings to rural ones and, like other infrastructure, should become part of government operating budgets and management programs. The Department of Transportation plans to develop training modules and workshops specifically targeting pedestrian and bicycle design in a continued effort to encourage community livability (Clinton-Gore Administration 2000).

$ A Surgeon General's report concludes that regular physical activity that is performed on most days of the week reduces the risk of developing or dying from heart disease, diabetes, high blood pressure, colon cancer, depression and anxiety. It also helps control weight and build and maintain healthy bones, muscles, and joints. Examples of moderate activity include walking 2 miles in 30 minutes, running 1 ½ miles in 15 minutes, and bicycling 5 miles in 30 minutes. One promising approach to achieving these activity goals for improved health is for communities to build bicycle and walking paths separated from automobile traffic (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention 1996).

$ Increasing walking and bicycling opportunities is becoming a fundamental goal of community design, transportation policy, and public health professionals. This includes promoting integrating these activities into daily trip-making routines, and shifting a portion of the 73 minutes the average person drives per day to walking and/or bicycling. In 1995, only 6.4 percent of all trips made were made by walking and bicycling. There is opportunity to change those percentages and providing adequate trails and pathways is an integral part of a balanced transportation plan (U.S. Department of Transportation, Federal Highway Administration 1997).

$ Ten out of 36 recreation activities identified in a nationwide survey were trail-related. Walking for pleasure is the nation's most popular trail-type activity. 42 percent of the elderly walk for pleasure. The proportion of bicyclists in the 12-and-older population has more than tripled since 1960. Participation for horseback riding has remained stable (U.S. Department of the Interior, National Park Service 1986).

2.3.2 National Study of Benefits of Trails

A National Biking and Walking Study by the U.S. Department of Transportation includes a detailed list of trail benefits, which are summarized below. Many specific samples from around the country are included. The study is organized by how benefits can be realized in terms of recreation, economics, education, the environment, transportation, history and culture, access, and general quality of life. A *Community Preferences* study, completed in 1998, also outlines specific transportation and efficiency benefits that are included in this section.

Recreation

$ Trail users realize improved health and increased physical fitness through convenient access to the outdoors and close-to-home recreational opportunities.
$ *Trails for All Americans* reports that 60 million Americans are bicyclists, 17 million are horseback riders, and 100 million walk for pleasure. The study also states that in the year 2000 more than 80 percent of the nation's population would reside in urban areas.
$ In addition, developers and administrators of linear parks and trail systems realize increased urban recreation programming, higher visibility, and lower facility acquisition and development costs for outdoor recreation facilities.
$ As the number of two-career couples and single-parent families continues to increase, the physical and economic limits to mobility are increasing and available leisure time is decreasing. These factors influence recreation options and make close-to-home opportunities a priority that trails can satisfy.

Economic

Direct

- $ Trail passes and user fees can generate direct income for trail facility management, maintenance, and improvements.
- $ Permits and leases to utility companies can yield direct income, or can create partnerships for joint development and implementation of trail systems on utility lands. In Ventura, California, the County Parks Department Trails Manager reports that the Parks Department will spend approximately $25,000 a year maintaining the trail, but will bring in over $36,000 a year from the utility leases along and across it.
- $ Trails can provide tourist income for communities along a trail route and spur development of new businesses and the creation of new jobs to serve trail users. A 1991 National Parks Service/Penn State University study of rail-trails revealed that average per person, per day trip expenditures were $3.69 for Layfayette/Moraga Trail users (east of Oakland, California). When multiplied by the total visits made to each trail during the year, the total annual economic activity resulting from trail use was estimated to be $1,476,000 for this trail.
- $ The December 1990 issue of *Bicycling* magazine reported that with a commute of 9.9 miles each way and a fuel efficiency of 28.7 mpg, the average American uses 3.45 gallons of gasoline each week to commute to work by car. This costs $4.42 ($6.21 at 2001 price of $1.80 per gallon), which means that a typical bicycle commuter can save $221 a year in gasoline costs alone ($310 with previous adjustment). An additional economic benefit cited by the same article involves giving up a second vehicle, which is a savings of $3,000 per year or $250 per month based on typical maintenance and fuel costs not to mention capital costs.

Indirect

- $ Real estate adjacent to trail corridors increases in value, takes on a sense of identity, and becomes easier to market with the development of successful trail facilities. A developer in Virginia advertised that a regional trail would cross approximately 50 tracts of land and sold all of the adjacent parcels within four months.
- $ Additional indirect economic benefits can be realized through sales tax revenues from trail-related expenditures, preservation of natural vegetation, investment by local businesses and the private sector in the community, and reductions in commuting and health care costs.
- $ *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors,* A National Park Service Publication, examines how exercise derived from recreational activities such as trail use lessens health-related problems and reduces healthcare costs. The study states that people who exercise regularly have 14 percent lower claims against their medical insurance,

spend 30 percent fewer days in the hospital, and have 41 percent fewer claims greater than $5,000.

Educational

- $ Educators and students can use trails for field trips to outdoor classrooms that contain a wide range of study materials and can accommodate all learning levels. Trails within communities offer nearby opportunities for field trips in study areas such as biology, ecology, history, and art.
- $ Development of trails near sensitive environments provides an opportunity to preserve unique plant communities, wildlife habitats, ecological systems, and remnants of native plant habitats that are invaluable resources for scientific study. Dedicating land for open space preservation and obtaining public access easements helps to ensure that valuable educational resources will not be lost nor go unappreciated.
- $ Interpretive signage, volunteer programs, and promotional materials developed in conjunction with trail systems can provide the opportunity for every trail user to learn about the areas through which he/she is passing.

Environmental

- $ Many of the lands encompassing trails and greenway systems act as buffer areas that protect water quality by cooling water temperatures and filtering sheet runoff, excess nutrients, silt, and agricultural chemicals.
- $ Trail and greenway projects aid in storm water management by stabilizing stream banks, protecting river valley lands from erosion, serving as natural flood control mechanisms, and keeping flood prone lands free of urban development.
- $ Trail corridors preserve various types of vegetation which reduce noise, cool and filter air, remove dust, reduce smog, offer microclimate control, and stabilize rainfall increases that contribute to flooding.
- $ Earth Day USA and Scholastic, Inc. report that within a year, a family who walks or bikes two miles a day instead of driving will send 730 fewer pounds of carbon dioxide into the atmosphere.

Transportation

- $ Trails can provide linkages to important destinations, improve the opportunities to use alternatives to automobiles, help increase integration with mass transit systems, and, if properly designed, can reduce motor vehicle-bicycle conflicts.

- $ The most successful commuter trails offer a safe and direct link to origin and destination points, with access provided to adjacent residential, commercial, and recreational points of interest. Networks of trail systems can connect cities, regional points of interest, different parts of a community, and various transportation routes.
- $ Bicycling as a form of alternative transportation is energy efficient, economical, and healthy for the commuter and for the community at large.
- $ Bicycling and walking provide access to schools from within neighborhoods, removing vehicles from collectors and arterials.
- $ Bicycling or walking once per week would free up roadway capacity by 20 percent.

Energy Efficiency

- $ Cycling and walking are the most energy efficient forms of transportation (see Figure 2-3).
- $ A May 1991 *Bicycling* magazine article cites the following statistics related to alternative transportation such as bicycle commuting:
  - 100 bicycles can be produced for the energy and resources that it takes to build one medium-size automobile.
  - Automobile emissions rank number one among all causes of air pollution.
  - If U.S. commuters would bicycle to work 1.25 times each week, the need for Middle East oil would be eliminated.

Space Efficiency

- $ Bikes use one-third less roadway space than cars.
- $ Road capacity: bikes are three times as efficient (2,400 bikes per hour per meter or 3,600 pedestrians per hour per meter vs. 690 cars per hour per meter).
- $ Parking: up to twelve bikes can park in one automobile parking space

Historic and Cultural

- $ Trail or rails-to-trails projects offer unique and intimate opportunities to appreciate and relearn the history and importance of America's railroad industry.
- $ Trail projects can provide linkage to sites of cultural and historical significance.

- $ Innovative project planning and development can emphasize the history of a region. Trail routes may follow historic transportation routes or a historical theme may be used for project development.

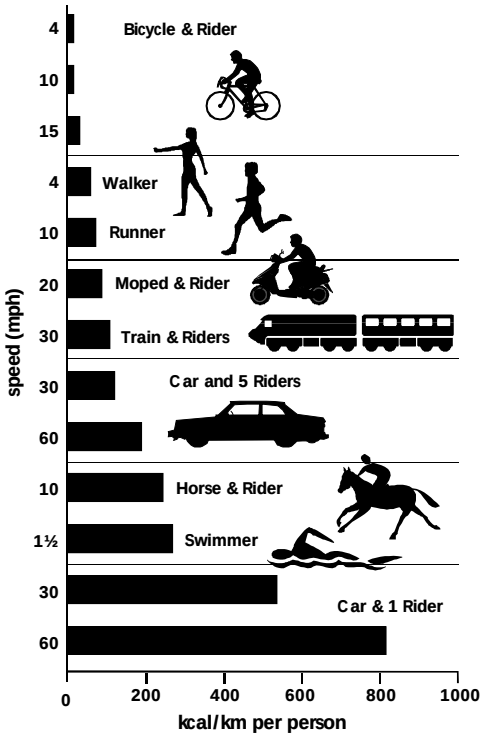

Figure 2-3. Energy Efficiency by Mode

$ Trails can highlight local culture, be the site of cultural activities, or serve as an added attraction for events held in surrounding communities.

Access

$ Trails make the outdoors more easily accessible to the general public and provide people with an intimate opportunity to enjoy the waterfronts and shorelines of rivers, lakes, bays, and streams.

$ Trails improve access to remote areas for emergency and maintenance personnel.

$ Trails allow people to interact with nature and with other people.

$ Trails help to fill the scenic and recreational needs of all people, including the disabled, the elderly, children, and families.

$ Properly designed and accessible trail facilities allow otherwise restricted persons to participate in the mainstream of society.

Health/Quality of Life

$ Business and growth are attracted to communities that offer amenities such as trails and greenways, which improve local quality of life. Improving access to the outdoors provides for an escape from the city and a sense of well-being and freedom for residents.

$ Trails provide for social opportunities such as getting to know neighbors, participating in charitable fund-raising activities, and preserving a livable environment for future residents of a community. Projects demonstrate community pride, involvement, and support for a common goal.

2.3.3 Land Use Benefits

The land use categories in the county of San Diego can have a direct benefit from trails. If trails are planned properly a variety of trail benefits can be achieved for the individual land uses. Also, with the opportunities for linking various land uses through an effective trail system, many of the benefits are distributed throughout the land use categories. The broad interpretation of land use benefits are also factors that help to establish and support the nexus analysis, which is discussed in Chapter 3. Based on the benefits described earlier a short review is provided, (and also summarized on Table 2-7), to demonstrate how trails can be a benefit to the County's individual land uses.

Residential

- Recreation: Providing trails within or near residential areas increases the opportunities for low cost outdoor recreational activities such as hiking, walking and biking.

- Economic: Providing trails near residential areas has the potential of increasing the property value for residential developments. Using trails (walking or biking) as an alternative transportation source can also provide a yearly savings when residents do not have to rely solely on automobiles for transportation.

- Transportation: Trails provided in residential areas and connected to important destinations (i.e. employment centers, community facilities, recreation centers, schools) can reduce the reliance on automobiles, improve roadway capacity and help integration with mass transit. Trails can offer safe and direct connections for residents and reduce automobile - pedestrian / cyclist conflicts.

- Access: Trails in residential areas make the outdoors more accessible allowing opportunities to interact with nature. Trails can also help provide access to scenic or recreational areas for all people including the disabled, the elderly, and families.

- Health/Quality of Life: Trails within residential areas provide the opportunity for improved health and increased physical fitness. Trails can provide residents access to the outdoors providing an escape from the city and a sense of well-being and improved mental health.

Commercial

- Recreation: Providing trails within or near commercial areas increases the opportunities for low cost outdoor recreational activities such as hiking, walking and biking. Trails can be used by employees for noontime exercise and also for relaxation.

- Economic: Providing trails near commercial / employment areas has the potential of increasing the property value for commercial developments. Having trails located near commercial recreation facilities (sports/fitness centers) can be beneficial and offered as an extension of their indoor/outdoor facilities. Trails can also provide tourist income for communities along trail routes and spur development of new business. Using trails (walking or biking) as an alternative transportation source can also provide a yearly savings when commuters do not rely solely on automobiles for transportation to the workplace.

- Transportation: Trails provided in commercial areas and connected to important destinations (i.e. employment centers, community facilities, recreation centers, residential areas) can reduce the reliance on automobiles, improve roadway capacity and help with the integration with mass transit. Trails can offer safe and direct connections for employees to commute to the workplace and reduce automobile - pedestrian / cyclist conflicts.

- Access: Trails in commercial areas make the outdoors more accessible for employees allowing opportunities to interact with nature at noontime or before and after work.

- Health/Quality of Life: Trails within commercial areas provide the opportunity for improved health and increased physical fitness for people in the workplace. Trails can provide employee access to the outdoors providing an escape from the city and a sense of well-being and improved mental health by relieving stress from the workplace.

Industrial

- Transportation: Trails provided in industrial areas and connected to important destination (i.e. employment centers, community facilities, recreation centers, residential areas) can reduce the reliance on automobiles and improve roadway capacity. Trails can offer safe and direct connections for residents to employment centers and reduce automobile - pedestrian / cyclist conflicts.

- Health/Quality of Life: Trails within industrial areas provide the opportunity for improved health and increased physical fitness for people in the workplace. Trails can provide employee access to the outdoors providing an escape from the city, a sense of well-being and improved mental health by relieving stress from the workplace.

Agricultural

- Health/Quality of Life: Trails within agricultural areas provide the opportunity for improved health by increasing physical fitness through exercise for the agricultural community.

Public/Semi-Public

- Recreation: Providing trails within or near public/semi-public areas (schools, churches, community facilities, recreation centers) increases the opportunities for low cost outdoors recreational activities such as hiking, walking and biking.

- Economic: Providing trails near or within public/semi-public areas has the potential to provide low cost recreational opportunities for the community. Permits and leases to utility companies can yield direct income when trail routes are located on utility lands.

- Educational: Trails can provide educators and students opportunities for field trips to outdoor classrooms and offer a wide variety of studies related to biology, ecology, history and even art. These studies could be in conjunction with interpretive centers or information signage developed as part of the trail system.

- Environmental: Trails can be used within environmentally sensitive areas providing educational opportunities for students and the general public.

- Transportation: Trails provided in public/semi-public areas, especially schools, and connected to important destinations (i.e. recreation centers, parks, residential areas) can

reduce the reliance on automobiles and buses and improve roadway capacity. Trails can also offer safe and direct connections for students to schools and can reduce pedestrian / cyclist conflicts with automobiles.

- Historic: Trails can be linked to sites of historic and cultural significance, again providing opportunities for educational experiences.

- Access: Trails in public/semi-public areas make the outdoors more accessible to the general public, including students, allowing opportunities to interact with nature (see Educational above). Trails can allow access to remote areas for emergency and maintenance personnel.

- Health/Quality of Life: Trails within public/semi-public areas provide the opportunity for improved health and increased physical fitness. Trails can provide students and others access to the outdoors providing an escape from the city and a sense of well-being and improved mental health.

Ecological Resource Area

- Educational: Trails can provide educators and students opportunities for field trips to outdoor classroom and offer a wide variety of studies related to biology, ecology, history and even art. These studies could be in conjunction with interpretive centers or information signage developed as part of the trail system located within Ecological Resource Areas.

- Environmental: Trail corridors can be used to preserve various types of sensitive biological resources, which provide numerous side benefits.

- Transportation: Trails provided in ecological resource areas can connect to important destinations (i.e. employment centers, community facilities, recreation centers, residential areas) can reduce the reliance on automobiles and improve roadway capacity. Trails can offer safe and direct connections to these areas and reduce automobile - pedestrian / cyclist conflicts.

- Access: Trails in public/semi-public areas make the outdoors more accessible to the general public allowing opportunities to interact with nature. Trails can also allow access to remote areas for emergency and maintenance personnel.

Park/Open Space

- Recreation: Providing trails within or near parks and open space areas increases the opportunities for low cost outdoor recreational activities such as hiking, walking and biking for the general public.

- Educational: Trails as an extension of parks and open space, can provide the general public opportunities to study or learn about biology, ecology, and history. This can be accomplished when trails are developed in conjunction with interpretive centers or information signage.

- Transportation: Trails can provide links to park and open space when connected to important destinations (i.e. employment centers, community facilities, residential, schools) and can reduce the reliance on automobiles. Trails can offer safe and direct connections to parks and open space areas for the general public and reduce automobile - pedestrian / cyclist conflicts.

- Access: Trails in open space can make the outdoors more accessible allowing opportunities to interact with nature. Trails can also help provide access to scenic or recreational areas for all people including the disabled, the elderly, and families. Also, trails can allow access to remote areas for emergency and maintenance personnel.

Table 2-7
Trail Benefits Compared to Land Use Categories

	Trail Benefits							
Land Use Category	Recreation	Economic	Educational	Environmental	Transportation	Historic	Access	Health/ Quality of Life
Residential	X	X			X		X	X
Commercial	X	X			X		X	X
Industrial					X			X
Agricultural								X
Public/Semi-Public	X	X	X	X	X	X	X	X
Ecological Resource Area			X	X	X		X	
Park/Open Space	X		X	X	X	X	X	X

- Health/Quality of Life: Trails within parks and open space can provide the opportunity for improved health and increased physical fitness. Trails can provide residents access to the outdoors providing an escape from the city and a sense of well-being and improved mental health.

2.3.4 Conclusions-Benefits of Trails

Many surveys conducted and associated reports released over the past two decades point to the same conclusion: physical activity has direct health benefits, and trails provide the opportunity for many people to participate in some of the most popular activities.

The alternative transportation benefits of trails are also growing in importance as our roads become more congested. More people are looking for ways to get from place to place with less impact on the environment, and trails provide this option.

Over the past several years, comments received by the County from Community Planning and Sponsor Groups as well as existing language contained in Community Plans indicate that many trail benefits are important to residents. Steering committee meetings held at the onset of this assessment process confirmed the value of several of these ideas including:

- Access to schools via pathways within communities.
- Trails for commuter and recreation uses.
- A Trail Master Plan as a means to preserve land while competing with development demands.
- Trails rather than trespassing.

The County should acknowledge and accept the many benefits of trails and be prepared to defend its support of trails as they provide far-reaching benefits for residents.

2.4 TRAIL NEEDS

The County establishes numerical standards for roads, sewers, and other infrastructure based upon population. Although trail needs may be more difficult to establish, the County of San Diego has requested a quantifiable level of service to use as a baseline or guide for future trail planning efforts in order to satisfy trail needs. The process for this Trail Needs Assessment includes a review of the overall population patterns, trail availability within San Diego County for the existing population, and the ability for trails to continue to serve the anticipated growth in

population. The focus of this section of the assessment is establishing trail quantities needed. Qualitative aspects of the trails are discussed in section 2.5.

In San Diego County a significant number of trails and pathways exist, totaling over 1,400 miles in length. The unincorporated region of San Diego County encompasses 1,186 miles of trails and pathways, of which the majority is located within federal and state lands. The numerous existing trails (see Figure 2-4) satisfy separate and distinct trail needs within the County of San Diego. Within the County there is an extensive system of existing and planned long-distance trails that could logically satisfy regional trail needs. There are also existing trails that serve the local community and subregional plan areas and could satisfy the need for community level trails. Below is a discussion of these two types of trail needs.

Regional Trails

Although not currently identified in the county, there are several existing and planned trails with characteristics and conditions that lend themselves to serving a regional function or need. These trails cover long linear distances and transcend the boundaries of the local municipalities and even the county. A significant portion of these trails could be identified and already form a backbone trail system of regional significance and should be considered "candidate" regional trails. These candidate regional trails are, in essence, the freeways of the trail system in that they create significant north-south and east-west trail corridors. The success of this regional system will be based on the County's ability to participate in completing the missing segments that will satisfy the need to provide long-range trail opportunities. Attempting to establish a population-derived, numerical baseline to establish a level of service or need is not necessary.

These trails are expected to be used by residents from all over San Diego County and may require driving some distance to reach trailheads. Most residents can easily reach some existing candidate regional trails within 30 minutes, while other trails may require a longer travel time to the trailhead for a more secluded wilderness experience (also see Section 2.5). Since these trails form important connections and provide a variety of trail experiences along with longer trail routes, residents are generally willing to travel some distance to reach them. It should be noted that the trailheads that would serve these types of trails should also include more amenities, such as parking areas and restrooms, to provide for the greater number and variety of users.

Community Trails

Although not currently identified in the county, these existing trails are more community serving. Candidate community trails are "close in" trails that serve a different need than a regional type

Figure 2-4 Trails and Pathways within San Diego County (11x17)

Back of Figure 2-4.

trail. They are able to satisfy the need for local residents to use trails to connect to community facilities, ideally linking neighborhoods, schools, parks, shopping districts and other land uses. Community trails also provide benefits to residents in the form of easily accessible recreation opportunities and alternative transportation options. The local surveys indicate a current desire and possible need for more of these local, community trails. Future trails should also provide for a greater connectivity within the Community Trail Systems. The community level of participation (see section 2.2.5) also indicates that many communities express a current desire for additional community trails.

As the population increases within each community, it is anticipated that the need for community trails will increase as well. These trails are intended to serve the local communities, although it is also expected that some residents, including residents of the cities, may travel to nearby communities to use more extensive community-based trail systems. It is important to establish a baseline level of service in order to provide adequate community trails as the population grows. Understanding the existing population patterns and the quantity and location of existing trails within San Diego County is the starting point for understanding the County of San Diego's current level of service.

Trail Needs

In the methodology of establishing a relevant level of service baseline, it must be accepted that the County of San Diego is not trying to provide for the trail needs and population growth of both the unincorporated County and all of the cities. This assessment assumes that the County will attempt to provide for the unincorporated region's population growth needs, while the cities are expected to provide for their own trail needs as their populations grow. It is understood however that the County should recognize the magnitude of the growth in the cities and attempt to determine the potential impact to trails throughout the county. It is likely that the residents of the cities currently use trails throughout the county, and this use will potentially increase with the growth in population. Follow-up surveys will be useful in determining who is using the trails and whether the quantity of users from the cities are having an impact on the quality of the trail experience. Since many trails in the unincorporated regions are located within state and federal lands, direct impacts to County controlled trails from city residents will be somewhat limited. It is anticipated that trails in the unincorporated region will continue to be used by all county residents, as will many trails located in the cities.

Standards for parks have long been used to identify a basic, acceptable level of service for communities. In California, per capita standards for neighborhood and community parks can be used to establish land dedications and developer fees for new subdivisions through the Quimby

Act (see Appendix F). Statewide standards such as this have not been identified for trails. Trail standards, expressed as the mileage of trails on a per capita basis, have not been implemented or established by other counties and municipalities in California. This is primarily due to the fact that trails are understood to be a reflection of community values or specific needs rather than a quantifiable amount of trails. In many cases, the issue of connectivity or connections with important features within the community is the primary focus of community specific trail planning goals.

Los Angeles, San Bernardino, and Riverside Counties do not establish specific numerical standards for trails. Instead, these counties emphasize continuity and establishing important links to community facilities. Orange County also avoids specific standards based on population and instead typically focuses on trail development where new urban development is taking place. Santa Clara County includes population-based guidelines in its Trail Needs Assessment but only uses them to gauge whether the mileage of proposed trails shown on their Trails Master Plan is reasonable given the projected population growth.

Unlike these other counties, the County of San Diego has expressed a desire for establishing a quantity-based need for **future community-level trails**. This is, in part, because of the number and complexity of the county's community group organizations and their desires to have trails within their communities. The County needs a method to be able to provide for the trail needs of all the unincorporated residents in a reasonable, fair and equitable manner. The aim of the process used in this Trail Needs Assessment is to derive a baseline for determining an optimum level of service for future population growth that would be considered reasonable. In order to identify the quantity of trails needed to continue to satisfy a growing population, several dynamic factors are considered. The process used for this assessment includes:

- $ Understand the county's existing population and density patterns.
- $ Determine the number of existing trails in the county that serve the existing population base.
- $ Examine the existing trail locations and their accessibility to the existing population.
- $ Establish a baseline by comparing the existing population with the existing trails in order to determine future trail needs.

The baseline that is established can then be used to evaluate possible trail deficiencies and project future trail needs as the population base increases in the county. It should be recognized that this baseline methodology is outlined for an effective County Trail System primarily within the individual communities. A recommended approach for the Regional Trail System is also addressed.

Other Models for Establishing a Baseline

A level of service standard, or baseline, used in past assessments comes from a National Park Service trail study from 1966. It is the most current national standard available and is used in this Needs Assessment in order to establish a frame-of-reference:

> For metropolitan areas: 25 miles of foot trails, 5 miles of bridle path, and 25 miles of bicycle trails/50,000 residents (U.S. Department of the Interior, Bureau of Outdoor Recreation 1966).

The trails needed based on this National Parks Service standard would be considered restricted trails. It is recommended that the County of San Diego develop a standard of multi-use trails for consideration during trail planning efforts. Multi-use trails are the most economical and reasonable for the County to provide (see also section 2.5.2). Therefore, for purposes of this analysis and comparison, the federal standard will be simplified to provide a ratio of 25 miles of trails per 50,000 residents, which converts to 0.5 miles/1,000 residents. With this ratio or national baseline, the unincorporated area currently would only need a total of 226 miles of trails based on its total existing population. The unincorporated region of the County of San Diego currently has close to 1,200 miles of existing trails and pathways, far exceeding this established national standard.

The National Park Service standard does not reflect current lifestyles and attitudes about the importance of outdoor recreation that more current surveys have identified. The Park Service attempts to provide a national standard, which, although helpful as a frame-of-reference, is not applicable for trail planning efforts today. More recent studies, such as the Public Opinions and Attitudes on Outdoor Recreation in California 1997, do not provide specific numerical standards relating to trails. The county of San Diego has a unique setting and environment for trails and an impressive quantity of existing and proposed trails within the county boundaries. The County also has a complex government structure and many planning groups with an interest in expanding the trail system. A different approach to trail planning is necessary to carry out a successful County Trail Program. It is recommended that the County adopt its own special baseline for future trail planning efforts.

2.4.1 Establishing a San Diego Baseline

Before attempting to project future community trail needs or develop an appropriate baseline that establishes a minimum level of service needed for future population growth, a summary of existing populations and trails was developed. The GIS system provided through SANDAG and

the County of San Diego was used to identify existing trails within San Diego County. SANDAG provided existing population patterns.

Existing Population Patterns

The existing population pattern in the county of San Diego is illustrated in Table 2-8 and includes the population of each Community/Subregional Plan Area. The existing population pattern for the incorporated area is illustrated in Table 2-9. The total population in the unincorporated region is 451,585 while the incorporated area (cities) is 2,240,022. The total existing population for the entire San Diego County region is 2,691,607. Again, the cities are considered in this process simply for information and comparison purposes. At this time, the County will only attempt to provide for its own (unincorporated) population growth needs.

Existing Trails

The quantity of existing trails and pathways illustrated on the County's GIS maps are included in Table 2-10 for each Community/Subregional Plan Area. Figure 2-4 illustrates these trails and pathways. The unincorporated region of the county encompasses 1,186 miles of trails and pathways, and the majority of these trails are located on state and federal lands. An additional 229 miles are found in the cities for a countywide total of 1,415 miles of existing trails and pathways.

This background information provides an understanding of trail quantities within San Diego County relative to the existing population of the county. When the existing unincorporated population is compared to all existing trails and pathways located in San Diego County, baseline or current level of service standard for the county of San Diego is derived. All trails in the county, including those located in the cities, are compared to the unincorporated population because the focus of this assessment is the unincorporated county, but these residents can use trails in the entire county.

This comparison provides a ratio of 3.1 miles/1,000 residents (see Table 2-11). This current quantity of trails could become the baseline to use for future trail needs projections. However, when reviewing the trail locations (Figures 2.4 / 2.5) it becomes clear that the majority of the trails are in the central and eastern portion of the county, while the major population base is in the west.

Table 2-8
Population Patterns-Unincorporated Region of San Diego County

Community/Subregional Plan Area	Existing Population 1997	Population 2020*
Alpine	15,449	27,369
Barona	517	0
Bonsall	9,483	17,217
Central Mountain- TOTAL	5,199	6,567
Cuyamaca	*711*	*680*
Descanso	*1,852*	*2,274*
Pine Valley	*2,627*	*3,613*
Balance	*9*	*0*
County Islands	2,048	2,130
Crest-Dehesa	10,357	12,000
Desert-TOTAL	5,276	14,079
Borrego Springs	*3,745*	*12,000*
Balance	*1,531*	*2,079*
Fallbrook	36,681	50,000
Jamul-Dulzura	10,194	18,641
Julian	2,790	3,100
Lakeside	57,666	70,000
Mountain Empire-TOTAL	6,229	18,520
Boulevard	*1,661*	*4,134*
Jacumba	*774*	*5,000*
Lake Morena	*2,902*	*6,500*
Potrero	*597*	*1,525*
Tecate	*204*	*1000*
Balance	*91*	*361*
North County Metro-TOTAL	41,618	65,109
Hidden Meadows	*7,361*	*10,000*
Twin Oaks Valley	*2,333*	*2,142*
Balance	*31,924*	*52,967*
North Mountain-TOTAL	3,027	4,650
Palomar	*596*	*871*
Balance	*2,431*	*3,779*
Otay	6,756	17,554
Pala-Pauma	5,579	7,000
Pendleton-De Luz	37,861	34,976
Pepper Drive-Bostonia	15,114	15,754
Rainbow	2,349	2,800
Ramona	32,325	52,043
San Dieguito	12,412	37,506
Spring Valley	61,379	69,292
Sweetwater	14,012	16,303
Valley De Oro	42,441	45,706
Valley Center	14,823	45,853
Totals	451,585	654,169

*Population 2020 numbers were endorsed by the Board of Supervisors, April 1998.
Shaded 2020 numbers are updated and not yet endorsed by the Board of Supervisors

Sources: Estrada + KEA Partnership
SANDAG Fall 1997, SDCGP 2020 modeling

Table 2-9
Population Patterns-San Diego County

	Existing Population 1995/97	2020 Projected Population	Percent Increase
Unincorporated*	451,585	654,169	46 percent
Carlsbad	67,167	132,232	97 percent
Chula Vista	151,093	275,455	82 percent
Coronado	28,705	29,719	4 percent
Del Mar	5,093	6,079	19 percent
El Cajon	91,464	104,563	14 percent
Encinitas	56,788	70,750	25 percent
Escondido	117,525	143,228	22 percent
Imperial Beach	27,732	33,333	20 percent
La Mesa	56,254	66,828	19 percent
Lemon Grove	24,605	30,238	23 percent
National City	54,120	58,977	9 percent
Oceanside	145,903	202,592	39 percent
Poway	45,161	53,338	18 percent
San Diego	1,174,422	1,693,533	44 percent
San Marcos	47,360	91,557	93 percent
Santee	53,593	74,856	40 percent
Solana Beach	13,531	16,127	19 percent
Vista	79,506	103,316	30 percent
Total Incorporated	2,240,022	3,186,721	42 percent
Countywide Totals	2,691,607	3,840,890	43 percent

Sources: Estrada+KEA Partnership
San Diego Association of Governments, February 1999 (Revised March 5, 1999)
*SDCGP 2020 modeling and SANDAG, Fall 1997. See also Table 2-8.

Table 2-10
Existing Trails per Community/Subregional Plan Area

Community/Subregional Plan Area	Existing Population 1997	Existing Trails*
Alpine	15,449	23
Barona	517	0
Bonsall	9,483	0
Central Mountain-TOTAL	5,199	233
Cuyamaca	*711*	*119*
Descanso	*1,852*	*22*
Pine Valley	*2,627*	*90*
Balance	*9*	*2*
County Islands	2,048	0
Crest-Dehesa	10,357	10
Desert-TOTAL	5,276	485
Borrego Springs	*3,745*	*46*
Subregion-Balance	*1,531*	*439*
Fallbrook	36,681	3
Jamul-Dulzura	10,194	17
Julian	2,790	12
Lakeside	57,666	20
Mountain Empire-TOTAL	6,229	140
Boulevard	*1,661*	*7*
Jacumba	*774*	*7*
Lake Morena	*2,902*	*24*
Potrero	*597*	*1*
Tecate	*204*	*0*
Balance	*91*	*101*
North County Metro-TOTAL	41,618	7
Hidden Meadows	*7,361*	*0*
Twin Oaks Valley	*2,333*	*0*
Balance	*31,924*	*7*
North Mountain-TOTAL	3,027	105
Palomar	*596*	*37*
Balance	*2,431*	*68*
Otay	6,756	14
Pala-Pauma	5,579	0
Pendleton-De Luz	37,861	27
Pepper Drive-Bostonia	15,114	0
Rainbow	2,349	0
Ramona	32,325	19
San Dieguito	12,412	47
Spring Valley	61,379	0
Sweetwater	14,012	13
Valley De Oro	42,441	2
Valley Center	14,823	9
Unincorporated Totals	**451,585**	**1186**

***Existing Trails**: Existing trails and pathways located within each Community/Subregional Plan Area. Existing trail segments are estimates based upon County input and the GIS provided by the County and are used here to give a general overview of the County of San Diego trail conditions.

Sources: Estrada + KEA Partnership; SANDAG Fall 1997, SDCGP 2020 modeling

Table 2-11
County of San Diego Total Trails Ratio

Existing Unincorporated Population (1997)	Countywide Existing Trails & Pathways	Miles of Trails per 1000 Residents
451,585	1,415	**3.10**

The ability of residents to access trails is of utmost importance when evaluating the trail needs of the population. In order for the population base to derive a clear benefit the trails should be located within a reasonable travel time of 15 or 30 minutes (by automobile). These close-in trails provide easy access for frequent use of a trail system for recreation and transportation purposes. The need for easily accessible trails is confirmed by local surveys, the preliminary trail maps submitted by many Community Planning and Sponsor Groups, and the typical time traveled to reach trails. It is also recognized by many state and national studies that easy access to trails and the potential for increasing the frequency of trail use increases the health and transportation benefits of a trail system.

Figure 2-5, which is described in greater detail below, demonstrates that the majority of the trails in the unincorporated region are not located within a 15-minute travel time buffer that would be considered "convenient" by residents of the county. In fact, many trails appear to be located outside 30-minute travel time buffers that are generally considered reasonable for a half-day trip. This 30-minute buffer is considered "reasonable" for a day trip because it allows time to reach the trailhead and still spend at least four hours on the trail. In addition, trails located within a 15 or 30-minute driving time of population centers and the regional highway network reflect the findings by the State that most recreation occurs close to home. The next step in assessing the need requirements is to determine how accessible the existing trails are to the current population using both 30-minute and 15-minute travel time buffers.

Existing Trails Within 30 Minute Radii

Trail accessibility from the most densely populated centers of the unincorporated Community Plan Areas is shown in Figure 2-5. The focus of this figure is the Community and Subregional Plan Areas. Plan Area boundaries are shown along with the existing trails and pathways, proposed trails and pathways, the regional highway network, and 15- and 30-minute travel time radii from the existing Plan Area population centers, as discussed below.

Existing population density is shown per Community/Subregional Plan Area for a range representing 0 to 13 persons/acre. Population "centroids" representing centers of more densely populated communities were identified by visual inspection of the population density map. The outer perimeters of overlapping travel time radii, representing 15- and 30-minute automobile travel times, are shown centered on the population centroids. The 15- and 30-minute travel time radii for automobile travel were derived based on the SANDAG travel time/distance formula. No centroids were identified in the eastern area of the county because the population density in these areas does not warrant one.

The 15- and 30-minute travel time radii illustrate the trails that can be easily accessed by the unincorporated county population centers. The total quantity of existing trails within the 30-minute travel time is 500 miles, which includes trails in the cities as well as the unincorporated areas. By comparing this quantity with the unincorporated population total of 451,585 residents, a ratio of 1.1 miles/1,000 residents is derived (see Table 2-12).

Table 2-12
County of San Diego Baseline Ratio (30-minute)

Existing Unincorporated Population (1997)	Existing Trails in 30-minute Radii	Miles of Reasonably Accessible Trails per 1000 Residents
451,585	500	**1.1**

These trails are reasonably accessible but not as readily accessibly as those located within 15-minute travel times. The trails located even closer to the population base are most likely to be used on a regular basis and provide the greatest benefit to residents.

Existing Trails Within 15 Minute Radii

The trails located within the 15-minute automobile travel time radii are considered most readily accessible to the local community populations, which is the focus of the need for a numerical baseline. The quantity of existing trails within the 15-minute radii is 380 miles, which includes trails in the cities as well as the unincorporated areas. The cities fall within the overlapping radii and are therefore included in the trail quantities used for this baseline ratio. By comparing this quantity with the unincorporated population total of 451,585 residents, a ratio of 0.84 miles/1,000 residents is derived (see Table 2-13).

Table 2-13
County of San Diego Baseline Ratio (15-minute)

Existing Unincorporated Population (1997)	Existing Trails in 15-minute Radii	Miles of Readily Accessible Trails per 1000 Residents
451,585	380	**0.84**

This ratio is a more appropriate baseline to use as a tool for future trail needs in the Community/Subregional Plan Areas. These "close-in" trails provide recreation, leisure, health and transportation benefits to the majority of the existing population base. These community-type trails are needed because of their convenience and easy accessibility. The local survey results and the community level of participation support the expansion of local trail networks. It is recognized that the rural and wilderness experience is also provided in the more remote parts of the county and will continue to be provided in many federal and state park lands.

Shown separately in Figure 2-6 is an example of trail accessibility for a single Community Plan Area, in this case Spring Valley. The travel distance buffer shown around Spring Valley illustrates the area that residents of the community can access within 15-minute automobile travel time, with the 30-minute travel time buffer shown on the small inset map. Figure 2-6 also shows that although the community can currently access a number of trails in nearby Community/Subregional Plan Areas and cities, the community itself does not have any existing trails.

The Spring Valley example above supports the need for the baseline to be applied to the individual Community/Subregional Plan Area populations in the future. It is necessary to examine the population growth patterns and projections within the Community/Subregional Plan Areas in order for the County to provide trails in a fair and consistent manner. The planning groups are only able to influence the future of community trails within their individual boundaries. If providing sufficient trail quantities to satisfy a community's needs for trails extends beyond their boundaries, the residents would have to rely on neighboring communities to implement a trail system. Each community should be self-reliant in providing for its own perceived trail needs. Trail planning efforts, community-specific goals, and resulting trail maps can be established through the Community Planning and Sponsor Groups so that the County can support a "bottoms up" approach to trail planning and implementation. In addition, population projections are established for the individual planning areas for the General Plan 2020 process, which allows the baseline to be applied to individual areas and be coordinated with the General Plan 2020. **Therefore, the baseline of 0.84 miles/1,000 residents should be used for future trail planning efforts within Community/Subregional Plan Area boundaries.**

Figure 2-5 County Accessibility Zones Based on Population Density (11x17)

Back of Figure 2-5.

Figure 2-6 Spring Valley Community Plan Area Population Density and Accessibility Zones (11x17)

Back of Figure 2-6

Application of the Proposed San Diego Baseline

Regional

The need for regional trails is based on providing a system of long-distance trails that traverse through the county. The planned segments of the regional-type trails, described elsewhere in this document as candidate regional trails, should be connected to the already existing trails. The County should do this **regardless of population growth** in order to provide a greater quantity of long-distance trails with relatively little expenditure. Linking these individual candidate regional trails should be a priority in the County's future trail planning and implementation efforts and should not be dependent on a numerical baseline.

Community

Community trails form important connections within the individual communities and should provide easily accessible recreation, health, and transportation benefits to residents of the communities of the county. The need for community trails should relate to the existing population and projected population growth in the communities. With the understanding of the existing population patterns and trail locations, a **reasonable baseline** for community trails has been established (see section 2.4.1, Establishing a San Diego Baseline).

The baseline derived in this chapter, which utilizes the quantity of trails that are most accessible to the existing unincorporated population base, is the most appropriate baseline for projecting the county's future trail needs. The countywide baseline of 3.1 miles per 1,000 residents does not account for the accessibility of the trails relative to the population base. The national standard discussed falls below the current existing trail baseline and is not appropriate for the County to maintain its current level of service. The baseline that includes all trails within the 30-minute travel buffers does not reflect the trails that are *easily* accessible by the majority of the population base. **Therefore, the San Diego baseline level of service of 0.84 miles of trails per 1,000 residents, derived using the trails available within the 15-minute travel time buffers, will be used as a guide for determining possible existing trail deficiency in some areas and future trail needs based on population growth projections.**

Existing Trail Deficiency per San Diego Baseline

In Table 2-14 the San Diego baseline is applied to the 1997 population of each Community/ Subregional Plan area. By projecting the baseline to the individual groups it can be seen that many areas exceed the population-based standard while a substantial number of areas fall below

the recommended baseline of 0.84 mile per 1,000 residents. This again emphasizes that the location of the trails is important and that although the county has what seems to be a surplus of trails, easily accessible trail opportunities are not as available. The projections in this table could be useful in prioritizing construction of community trails. It is not intended that the areas with an excess of trails give up or pay for that excess, especially as many of the trails are located on state and federal lands. The column of Table 2-14 that shows the excess trail quantities serves as a comparison for understanding the deficiency of trails in other areas. Overall, the existing deficiency is 215 miles of trails.

2.4.2 Future Conditions

With an understanding of existing population patterns and current trail accessibility, an analysis of future population growth and corresponding trail needs is possible. SANDAG and the County's preferred targets provide projected population growth for 2020 (Tables 2-8 and 2-9).

Proposed Population Patterns

San Diego County is projecting an overall population growth of 44-46 percent over the next 20 years. This growth varies considerably by area, ranging from zero growth in one Community/Subregional Plan Area to over 100 percent growth in others. Overall, the unincorporated population will grow from 451,585 to 661,304 as shown in Table 2-8. These projections are relevant and important in providing the County with an understanding that with this expected growth a corresponding need for trails and other forms of recreation will increase.

Proposed Trail Needs Baseline

As the population increases within the Community/Subregional Plan Areas there will be a need to increase the number of trails in order to adequately serve the residents of the unincorporated county. The County of San Diego baseline of 0.84 miles/1,000 residents is applied to the projected 2020 population of the plan areas in Table 2-15. Future trail needs are identified within the plan areas because trails within the individual communities serve the population most effectively and are likely to be the trails that most residents use on a regular basis. Also, these are the county's identified boundaries for planning purposes. The Community Planning/Sponsor Groups (also included in Table 2-15) will participate in the trail planning efforts.

As shown in Table 2-15, some plan areas already exceed the proposed San Diego baseline while other areas have a deficiency of trails. The deficiency or excess of trails is shown in the last two columns of the table. The column that shows the excess of trails is not an indication that there is

an overall excess of trails. The areas that show an excess of trails are located in the central and eastern portion of the county and, for the most part, have many trails provided on state and federal lands. It is not intended that plan areas with an excess of trails should reduce the amount of trails in their communities or pay for existing trails located within the plan area boundaries; the excess of trails is shown primarily for comparison purposes. It is evident that some areas will have no need for additional trails based on their existing quantity of trails.

On the other hand, other areas will have a considerable deficiency based upon the population growth projections. The last column, which shows the future trail deficiencies according to the San Diego baseline, provides a quantity of additional trails needed if the population increases as anticipated. New trails should be planned and phased in over the next 20 years in order to avoid potential deficiencies in the various areas. In all, 316 miles of additional trails will be needed by the year 2020 in the unincorporated county. This quantity should be used as a guide and many factors will influence the quantity and location of future trails, as discussed in more detail below.

2.4.3 Conclusions-Trail Needs

Based upon the number of existing trails located in the county, the most universal need is for a Trail Program to be established. The County must maintain and manage some of the existing trails and should take the lead in future trail planning efforts in the county. A successful Trail Program would include management and financial resources for trail planning, acquisition, construction, and maintenance of the trail system (see also Chapters 4 and 5).

Regional needs and community needs for trails are different and specific objectives for each are outlined below. In general, regional needs are for long-range connectivity of existing and planned candidate regional trail segments while community needs are population-based and relate to the desires of the individual Community Planning/Sponsor Groups.

Regional Trail Needs and Level of Service

With such a large quantity of candidate regional trails, ways to allow the greatest number of residents to access the existing trail system will lead to the most effective overall Regional Trail System. It is recommended that the County of San Diego plan future regional-type trail segments in a way that will allow the County to complete the critical links in the existing candidate regional trails. This concept of connectivity is the most important factor for planning the regional trails. Providing long distance connections regardless of population growth in the county should be the primary focus for a cohesive Regional Trail System.

Table 2-14 - Existing Trail Needs per County of San Diego Baseline

Community/Subregional Plan Area	Existing Population 1997	Existing Trails[1]	Current Trail Needs[2]	Excess[3]	Deficiency[4]
Alpine	**15,449**	**23**	**13**	**10**	**-**
Barona	**517**	**0**	**0**	**-**	**-**
Bonsall	**9,483**	**0**	**8**	**-**	**8**
Central Mountain- TOTAL	**5,199**	**233**	**4**	**229**	**-**
Cuyamaca	*711*	*119*	*1*	*118*	*-*
Descanso	*1,852*	*22*	*1*	*21*	*-*
Pine Valley	*2,627*	*90*	*2*	*88*	*-*
Central Mountain Balance	*9*	*2*	*0*	*2*	*-*
County Islands	**2,048**	**0**	**2**	**-**	**2**
Crest-Dehesa	**10,357**	**10**	**9**	**1**	**-**
Desert-TOTAL	**5,276**	**485**	**4**	**481**	**-**
Borrego Springs	*3,745*	*46*	*3*	*43*	*-*
Desert Subregion-Balance	*1,531*	*439*	*1*	*438*	*-*
Fallbrook	**36,681**	**3**	**31**	**-**	**28**
Jamul-Dulzura	**10,194**	**17**	**9**	**8**	**-**
Julian	**2,790**	**12**	**2**	**10**	**-**
Lakeside	**57,666**	**20**	**48**	**-**	**28**
Mountain Empire-TOTAL	**6,229**	**140**	**5**	**135**	**-**
Boulevard	*1,661*	*7*	*1*	*6*	*-*
Jacumba	*774*	*7*	*1*	*6*	*-*
Lake Morena	*2,902*	*24*	*2*	*22*	*-*
Potrero	*597*	*1*	*1*	*-*	*-*
Tecate	*204*	*0*	*0*	*-*	*-*
Mtn Empire Balance	*91*	*101*	*0*	*101*	*-*
North County Metro-TOTAL	**41,618**	**7**	**35**	**-**	**28**
Hidden Meadows	*7,361*	*0*	*6*	*-*	*6*
Twin Oaks Valley	*2,333*	*0*	*2*	*-*	*2*
North County Metro Balance	*31,924*	*7*	*27*	*-*	*20*
North Mountain-TOTAL	**3,027**	**105**	**3**	**102**	**-**
Palomar	*596*	*37*	*1*	*36*	*-*
North Mountain - Balance	*2,431*	*68*	*2*	*66*	*-*
Otay	**6,756**	**14**	**6**	**8**	**-**
Pala-Pauma	**5,579**	**0**	**5**	**-**	**5**
Pendleton-De Luz	**37,861**	**27**	**32**	**-**	**5**
Pepper Drive-Bostonia	**15,114**	**0**	**13**	**-**	**13**
Rainbow	**2,349**	**0**	**2**	**-**	**2**
Ramona	**32,325**	**19**	**27**	**-**	**8**
San Dieguito	**12,412**	**47**	**10**	**37**	**-**
Spring Valley	**61,379**	**0**	**51**	**-**	**51**
Sweetwater	**14,012**	**13**	**12**	**1**	**-**
Valley De Oro	**42,441**	**2**	**36**	**-**	**34**
Valley Center	**14,823**	**9**	**12**	**-**	**3**
	451,585	**1186**	**379**	**---**	**215**

(1) Existing Trails: Existing trails and pathways located within each Community/Subregional Plan Area. See also Table 2-10.

(2) Current Trail Needs: Trails needed based on the San Diego Baseline ratio of 0.84 Miles / 1,000 Residents for the existing 1997 population. Baseline derived from the quantity of trails within a 15-minute radius from the unincorporated population "centroids" (per Figure 2-5) and the total existing unincorporated population.

(3) Excess: Existing trail quantities exceeding the quantity needed per the San Diego Baseline. Typically found in central and eastern portions of the county and consists of primarily trails on state and federal lands. Not intended to imply overall excess of available trails.

(4) Deficiency: Existing trail quantities below the quantity needed per the San Diego Baseline. Names of areas with a deficiency are shaded.

Sources: Estrada + KEA Partnership; SANDAG Fall 1997, SDCGP 2020 modeling

Table 2-15 - Future Trail Needs per County of San Diego Baseline

Community/Subregional Plan Area	Population 2020[1]	Existing Trails[2]	Projected Trail Needs[3]	Excess[4]	Deficiency [5]
Alpine	**27,369**	**23**	**23**	**-**	**-**
Barona	**---**	**0**	**0**	**-**	**-**
Bonsall	**17,217**	**0**	**14**	**-**	**14**
Central Mountain- TOTAL	**6,567**	**233**	**6**	**227**	**-**
Cuyamaca	*680*	*119*	*1*	*118*	-
Descanso	*2,274*	*22*	*2*	*20*	-
Pine Valley	*3,613*	*90*	*3*	*87*	-
Central Mountain Balance	*---*	*2*	*0*	*2*	-
County Islands	**2,130**	**0**	**2**	**-**	**2**
Crest-Dehesa	**12,000**	**10**	**10**	**-**	**-**
Desert-TOTAL	**14,079**	**485**	**12**	**473**	**-**
Borrego Springs	*12,000*	*46*	*10*	*36*	-
Desert Subregion-Balance	*2,079*	*439*	*2*	*437*	-
Fallbrook	**50,000**	**3**	**42**	**-**	**39**
Jamul-Dulzura	**18,641**	**17**	**16**	**1**	**-**
Julian	**3,100**	**12**	**3**	**9**	**-**
Lakeside	**70,000**	**20**	**59**	**-**	**39**
Mountain Empire-TOTAL	**18,520**	**140**	**16**	**125**	**1**
Boulevard	*4,134*	*7*	*3*	*4*	-
Jacumba	*5,000*	*7*	*5*	*2*	-
Lake Morena	*6,500*	*24*	*6*	*18*	-
Potrero	*1,525*	*1*	*1*	*-*	*-*
Tecate	*1000*	*0*	*1*	*-*	*1*
Mtn Empire Balance	*361*	*101*	*0*	*101*	-
North County Metro-TOTAL	**65,109**	**7**	**55**	**-**	**48**
Hidden Meadows	*10,000*	*0*	*8*	*-*	*8*
Twin Oaks Valley	*2,142*	*0*	*2*	*-*	*2*
North County Metro Balance	*52,967*	*7*	*45*	*-*	*38*
North Mountain-TOTAL	**4,650**	**105**	**4**	**101**	**-**
Palomar	*871*	*37*	*1*	*36*	-
North Mountain - Balance	*3,779*	*68*	*3*	*65*	-
Otay	**17,554**	**14**	**15**	**-**	**1**
Pala-Pauma	**7,000**	**0**	**6**	**-**	**6**
Pendleton-De Luz	**34,976**	**27**	**29**	**-**	**2**
Pepper Drive-Bostonia	**15,754**	**0**	**13**	**-**	**13**
Rainbow	**2,800**	**0**	**2**	**-**	**2**
Ramona	**52,043**	**19**	**44**	**-**	**25**
San Dieguito	**37,506**	**47**	**31**	**16**	**-**
Spring Valley	**69,292**	**0**	**58**	**-**	**58**
Sweetwater	**16,303**	**13**	**14**	**-**	**1**
Valley De Oro	**45,706**	**2**	**38**	**-**	**36**
Valley Center	**45,853**	**9**	**38**	**-**	**29**
Totals	**654,169**	**1186**	**549**	**---**	**316**

(1) Population 2020: Numbers were endorsed by the Board of Supervisors, April 1998 for use in General Plan 2020 update planning process. Cross-hatched 2020 numbers are updated and not yet endorsed by the Board of Supervisors.

(2) Existing Trails: Existing trails and pathways located within each Community/Subregional Plan Area. See also Table 2-10.

(3) Projected Trail Needs: Trails needed based on the San Diego Baseline ratio of 0.84 Miles / 1,000 Residents for the GP2020 population projections. Derived from the quantity of trails within a 15-minute radius from the unincorporated population "centroids" (per Figure 2-5) and the total existing unincorporated population.

(4) Excess: Future trail quantities exceeding the quantity needed per the San Diego Baseline. Typically found in central and eastern portions of the county and consists of primarily trails on state and federal lands. Not intended to imply overall excess of available trails.

(5) Deficiency: Existing trail quantities below the quantity needed per the San Diego Baseline. Names of areas with a deficiency are shaded.

Sources: Estrada + KEA Partnership; SANDAG Fall 1997, SDCGP 2020 modeling

A Candidate Regional Trail Plan is included as Figure 2-7 and consists of existing and proposed trails that have city, county, state and/or federal significance. Based on the GIS information provide by the County of San Diego it appears that fewer than 100 miles of additional trails are needed to form an extensive and cohesive Regional Trail System in the unincorporated region of the county. These trails can and will service the entire county, including the cities, and should continue to be maintained by the respective jurisdictions and the County. The existing candidate regional trails form a network that provides several long distance north-south and east-west trails. The County is fortunate in that many of the candidate regional trails are located partially within city, state or federal jurisdictions and will continue to be managed and maintained by these entities. Some of these trails are well established and have been identified by name while others are not formally identified as of yet. All serve the long-distance linear function that could qualify them as regional trails. The candidate regional trails shown in Figure 2-7 include the California Riding and Hiking Trail, the Pacific Crest Trail, the Pacific Coast Trail, the Trans-County Trail, the San Dieguito River Park Coast to Crest Trail, and the Otay Valley Regional Park Trail. Other segments that are unnamed are also included in this figure.

Opportunities for partnerships and cooperative trail planning have been initiated throughout the county of San Diego and the timing is ideal for the County to take a proactive role in the continuation and expansion of these efforts. The need for regional trails can be easily met because of the existing and planned system that is already in place. By constructing a few additional segments, a cohesive long-distance trail system would be formed.

A Regional Trail Plan should be developed and adopted by the County of San Diego. This plan could be included in the General Plan or could be implemented as a separate Trail Master Plan element.

Community Trail Needs and Level of Service

Trail needs for individual communities are unique and should be considered in a different manner from regional needs. In communities, trails should be easily accessible to provide recreation, health, and transportation benefits to the greatest quantity of residents.

The local surveys confirm a need for easily accessible community trails, and the interest of Community Planning and Sponsor Groups in greatly expanding their local trail systems emphasizes this need. Over the past several years, comments by these groups have indicated that trails are important to the residents of the unincorporated county. In addition, 10 out of the 18 cities in the county have adopted Trail Plans, which indicates their recognition of the residents' need for easily accessible trail facilities. Based on other cities' and counties' trail planning

Figure 2.7 Candidate Regional Trail Plan (11x17)

Back side of Figure 2.7

efforts, there is a general concern that close-in trail opportunities might be lost to continued development if an effective Trail Program, including maps and guidelines, is not in effect. **For all of these reasons it is critical for the County to support community trail planning efforts immediately.**

The methodologies described for deriving a relevant baseline for assessing future community trail needs have some limitations. The numbers or **quantity** of trails in each ratio does not account for the **quality** and setting of the trail experience, which is a significant factor for the County Trail System. Additionally, the fact that residents from the cities may use trails located in the unincorporated region of the county could increase the number of people using those trails, which could affect the quality of the experience for the trails. If the trails become overused and overcrowded, the positive experience associated with using the trails could diminish. With this in mind, the County may want to consider increasing the baseline ratio factor in anticipation that a certain portion of the incorporated residents would use the future trails. At a minimum, the County should monitor trail use and user satisfaction through future local survey efforts, as described in section 2.2.4.

The baseline established in this assessment is one of many factors to determine community level trail needs. This numerical level of service baseline should be considered along with:

- Additional surveys to confirm needs and benefits
- Meetings with the Community Planning and Sponsor Groups
- Development of Community Trail Maps
- Community process to prioritize trail general alignments
- Environmental review

The County could establish a guide derived from the baseline of 0.84 miles/1,000 residents. The quantity of trails needed in each community would be a target, at least initially, and the County could develop community specific goals using the baseline as a guide. As Tables 2-10, 2-14 and 2-15 illustrate, the quantity of existing trails varies greatly between the Community/Subregional Plan Areas, from no trails to nearly 500 miles of trails. It is important to evaluate the individual needs of the communities on a case-by-case basis.

The baseline could also be used to help the County prioritize new trail segments. It is important to prioritize the construction of new trails so that each community with a desire to participate in trail development has some local trail opportunities provided by the County. A procedure of receiving periodic input from community groups will be necessary to ensure that each community's needs are understood and updated regularly.

After identifying community baselines and community specific goals, the County could formalize its intention to provide sufficient trail quantities necessary to off-set any deficiencies that may exist. In other words, the County could commit to the planning, construction, maintenance, and management of specified quantities of trails in each community. Candidate regional trails should be included in the quantities that the County would provide in the plan areas.

Some communities already exceed the quantity of trails needed based on the 2020 population and the San Diego baseline established. These communities would not be expected to remove or pay for their excess trails, but the County would not devote resources to additional trails in these areas unless a candidate regional trail segment crossed the plan area.

In cases where a community desires additional trails above and beyond the County's commitment for meeting baseline trail quantities, the community would be responsible for identifying additional funding and resources. For example, such communities may consider the formation of Community Service Areas (CSAs) or Special Districts to fund the additional trails. While the communities would be responsible for additional funding, it is recommended that the County retain oversight and overall control and management of the Community Trail Systems. See Chapters 4 and 5 for additional discussion of funding options for trails and pathways

Many Community Planning and Sponsor Groups have submitted preliminary trail maps indicating their preferences for trail locations within their communities. This in turn indicates the level of service they are seeking within their boundaries. The County's participation with each individual community will help to clarify and focus their expectations and qualify and prioritize their trail needs. Table 2-16 includes the quantity of trails initially requested by the participating planning groups. The trail quantities requested are compared to the quantity of existing trails and the future deficiency of trails based upon the San Diego Baseline level of service guide established in this chapter (see also Table 2-15). Thirteen out of fifteen maps submitted included requests exceeding the baselines projected for 2020, which indicates a strong interest from the Community Planning and Sponsor Groups in expanding their local trail systems. In all, over 1500 miles of trails were requested beyond the baseline projections for the individual communities.

The community trails requested for Lakeside can be seen in Figure 2.8 (see Appendix G for other preliminary trail maps prepared by Community Planning and Sponsor Groups). These maps serve as additional confirmation that many planning groups in the county desire extensive Community Trail Systems. The County should support and lead community trail planning efforts as well as the planning of a Regional Trail System.

Figure 2.8 Community Based Trails Participation – Lakeside (8 ½ x 11)

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Table 2-16 Trail Needs per San Diego Baseline and Preliminary Community Trail Maps

Community/Subregional Plan Area	Existing Trails[(1)]	Additional Trails Requested[(2)]	2020 Trail Deficiency[(3)]	Excess Trails Requested[(4)]
Alpine	**23**	**7**	**-**	**7**
Barona	**0**	**-**	**-**	**-**
Bonsall	**0**	**35**	**14**	**21**
Central Mountain- TOTAL	**233**	**-**	**-**	**-**
Central Mountain- Cuyamaca	*119*	*-*	*-*	*-*
Central Mountain- Descanso	*22*	*-*	*-*	*-*
Central Mountain- Pine Valley	*90*	*27*	*0*	*27*
Central Mountain- Balance	*2*	*-*	*-*	*-*
County Islands	**0**	**-**	**-**	**-**
Crest-Dehesa	**10**	**82**	**0**	**82**
Desert-TOTAL	**485**	**-**	**-**	**-**
Desert- Borrego Springs	*46*	*46*	*0*	*46*
Desert Subregion-Balance	*439*	*98*	*0*	*98*
Fallbrook	**3**	**104**	**39**	**65**
Jamul-Dulzura	**17**	**168**	**0**	**168**
Julian	**12**	**-**	**-**	**-**
Lakeside	**20**	**111**	**39**	**72**
Mountain Empire-TOTAL	**140**	**-**	**-**	**-**
Mtn Empire – Boulevard	*7*	*-*	*-*	*-*
Mtn Empire – Jacumba	*7*	*-*	*-*	*-*
Mtn Empire – Lake Morena	*24*	*-*	*-*	*-*
Mtn Empire – Potrero	*1*	*-*	*-*	*-*
Mtn Empire – Tecate	*0*	*-*	*-*	*-*
Mtn Empire – Balance	*101*	*-*	*-*	*-*
North County Metro-TOTAL	**7**	**-**	**-**	**-**
North County Metro – Hidden Meadows	*0*	*17*	*8*	*9*
North County Metro – Twin Oaks Valley	*0*	*-*	*-*	*-*
North County Metro - Balance	*7*	*-*	*-*	*-*
North Mountain-TOTAL	**105**	**729**	**0**	**729**
North Mountain - Palomar	*37*	*-*	*-*	*-*
North Mountain - Balance	*68*	*-*	*-*	*-*
Otay	**14**	**-**	**-**	**-**
Pala-Pauma	**0**	**-**	**-**	**-**
Pendleton-De Luz	**27**	**-**	**-**	**-**
Pepper Drive-Bostonia	**0**	**-**	**-**	**-**
Rainbow	**0**	**-**	**-**	**-**
Ramona	**19**	**212**	**25**	**187**
San Dieguito	**47**	**59**	**0**	**59**
Spring Valley	**0**	**7**	**58**	**(51)**
Sweetwater	**13**	**12**	**1**	**11**
Valley De Oro	**2**	**21**	**36**	**(15)**
Valley Center	**9**	**73**	**29**	**44**
Unincorporated Totals	**1186**	**1808**	**249***	**1559**

(1) Existing Trails: Existing trails and pathways located within each Community/Subregional Plan Area. See also Table 2-10.

(2) Trails Requested: Quantity of trails requested on preliminary trail maps submitted by the Community Planning / Sponsor Groups (15 maps received by the County-those groups are shaded in the list) that is in addition to the existing trails within these communities.

(3) 2020 Trail Deficiency: Future quantity of trails needed based on the San Diego Baseline ratio of 0.84 Miles / 1,000 Residents for the proposed 2020 population. See also Table 2-15.

***** Trail deficiency column includes only Community Planning / Sponsor Groups that have submitted preliminary trail maps and are the focus of this table.

(4) Excess trails requested by the Community Planning / Sponsor Groups beyond deficiency of trails per the San Diego Baseline projections (see also Table 2-15). Numbers shown in parenthesis are trail quantities requested by the Community Planning / Sponsor Groups that are less than the San Diego Baseline projections (see also Table 2-15).

Sources: Estrada + KEA Partnership; SANDAG Fall 1997, SDCGP 2020 modeling

2.5 TRAIL CHARACTERISTICS AND DEFINITIONS

Once benefits and the need for trails are established, a further definition of trail characteristics and possible guidelines can be outlined for future planning efforts. Many factors influence the design requirements for trails. Who uses the trails in turn influences the type and length of trail desired. Support facilities and design standards also vary depending upon the intended use of the trail. Most municipalities have a method for addressing trail requirements and standards. Some include definitions or elements within their general plan. It is also common to establish a Trail Master Plan, which often has a document associated with it to address trail definitions, user groups, trail settings, and design criteria or guidelines.

This Needs Assessment focuses on the level of demand for trails in the county, assuming future trails to be multi-use, non-motorized recreational trails. It is recommended that the County plan for this type of trail in an attempt to satisfy the greatest number of users with the least acquisition and construction cost per user. The County should also consider that in some instances single-use or restricted-use trails may be more feasible and economical and should not be excluded from future trail planning efforts. Phasing a trail by beginning with a single-track, single-use trail to a multi-use trail may also be the preferred option in certain cases. Trails will need to be designed and located to respond to the general population, community, and user group needs. Implementing a periodic survey process will also help the County to be certain that trails are provided fairly to the different user groups. See section 2.5.2 for additional information about user groups and trail needs.

2.5.1 Recommended Definitions

It is important to distinguish between trails and pathways as they have a different function and should have different design guidelines associated with them. It is also necessary to establish a hierarchy of trails within the county. A trail classification system needs to be established to define the type and variety of trails that will be part of a successful trail system. Each trail type discussed could be further subdivided by trail settings (see also Section 2.5.4), which could in turn lead to more detailed definitions. Design criteria (see also Section 2.6) for each trail should relate to the intended use and location. The following definitions are recommended based upon the existing trails in San Diego County and the input received through the surveys and the community input.

Regional Trails

Regional Trails should, and in many cases already do, form a backbone trail system within the county. Regional Trails can be identified by their significant length and by existing connections

that cross borders of Community/Subregional Plan Areas. Their purpose is to make significant connections across the county and encourage other trails in the system to connect to them for an overall cohesive trail system.

Some trails are also identified as having statewide significance. The California Recreational Trail Program identifies 23 California Trail Corridors. Some of these trails are only in the early planning stages while others, such as the Pacific Crest Trail, form basically continuous trails throughout the state. It is recommended that all of these trails be considered as regional trail planning efforts continue and that the status of the trails be further explored as the Master Plan phase is initiated. Four of the California Trail Corridors are located at least partially within San Diego County (see also Appendix H):

- Pacific Crest Trail
- Pacific Coast Trail
- South Coast Range Trail
- San Diego-Anza Borrego Desert Trail

These trails and other existing trails that form important connections should be identified within a County Trail Plan as part of a Regional Trail System. Trails that have regional significance include:

- California Riding and Hiking Trail
- Trans-County Trail
- San Dieguito River Park Coast to Crest Trail
- Otay Valley Regional Park Trail

Linking these trails and encouraging other trails to link to them should be a priority for future trail implementation. Specific design criteria for these trails should also be identified within the General Plan or as part of a Trail Master Plan document.

Community Trails

Community Trails are identified as trails that serve primarily the local populations. In order to continue the community-based process, Community Planning and Sponsor Groups should guide the establishment of these trails. The planning groups should suggest the trails' location, and may influence design criteria and trail purpose. These trails have the potential to connect local parks and open spaces and to provide links to these recreational areas from residential areas, schools, and businesses. Community Trails have the opportunity to provide alternative

transportation routes and many of the benefits of trails close to the population base. These trails may or may not connect to the Regional Trail System.

Community Trails should be a component of a County Trail Plan but should be sub-elements into which Community Groups would have considerable influence and input. The Master Plan should be a working document that could be easily updated. All of the trail types should be defined in the General Plan or a document supporting the Trail Plan.

Pathways

Pathways are non-motorized transportation facilities located within, or adjacent to, existing road rights-of-way. They are intended to serve both circulation and recreation purposes. Pathways provide a different and somewhat diminished experience from trails and should not be considered a substitute for trails. However, they can help form critical links and are an integral part of a functional trail system. Pathways may provide alternative transportation routes and enhance the ability of residents to access many parts of their communities without an automobile.

Other Municipalities' Trail Classifications

- Santa Clara County Countywide Trails Master Plan Update
  Santa Clara County categorizes trail routes into three hierarchies (within Executive Summary of document):
  - Regional Trails are of national, state, or regional recreation significance and extend beyond the borders of the County.
  - Sub-Regional Trails provide regional recreation and transportation benefits by providing continuity between cities and convenient, long-distance trail loop opportunities that link two or more Regional Trails.
  - Connector Trails provide convenient means of access from urban areas to the trail network of Regional and Sub-regional Trails or connect County Parks.

- San Bernadino County General Plan
  San Bernadino defines Regional Trails as those that serve as important trail links within the county. They further define:
  - Active Regional Trails as either Primary Trails, which are expected to serve as major trail routes, or Secondary Trails, which will link adjacent areas with Primary Trails.
  - Historic/Desert Trails are also defined as trails that are not proposed to be constructed by the County but identified only through signage or interpretive (educational) facilities. They acknowledge that some overlap may occur with these definitions.

- Orange County General Plan
  Orange County uses the term "regional riding and hiking trail" to include equestrian, pedestrian (walking, hiking, and jogging), and mountain biking (non-motorized) use. Specific trails may be restricted from one or more of the aforementioned user groups for special reasons contained in the operations policies. Trails and policies for regular street bicycles are addressed in the Bikeways Plan, which is a component of the Transportation Element.

- Riverside County General Plan
  Riverside defines:
  - Recreational trails are principally located within, radiating out from, and interconnecting parks, parkways and principal or special recreation areas in the county.
  - Parkways are located in, along or adjacent to a stream's floodplain and ordinarily extend the length of the river.

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  The County also defines equestrian trails within Land Use Standards. These are categorized as:
  - Regional trails
  - Community trails
  - Equestrian trails
  - Class I bikeway

  Each differs in width of easement required, maximum grade, and minimum overhead clearance.

- City of Scottsdale, Arizona
  Scottsdale's Design Standards and Policies Manual for Non-Paved Trails defines classifications of:
  - Urban
  - Rural
  - Backcountry Primary
  - Backcountry Secondary
  - Interpretive
  - Barrier-Free

  The manual provides direction for the planning, design, maintenance, and construction of these trails and outlines specific standards for each trail type defined. The trails are defined by use (either recreation or recreation and transportation) and by typical location and design

criteria. For example, a Backcountry Primary Trail is intended to provide recreation opportunities within preserved open space areas and provide connections between major trail access points and Backcountry Secondary Trails.

It is recommended that the County of San Diego utilize a similar methodology in defining trails within the General Plan and further within a Trail Plan and design guidelines document.

Conclusions-Trails and Pathways

There are many ways that trails can be classified and it is important that the County of San Diego establish relevant definitions that can be referred to by the County, the Community Planning and Sponsor Groups, and even the cities as a countywide trail system is established and expanded. At a minimum the County should define regional trails, community trails, and pathways. The definitions in this chapter are recommended as preliminary trail definitions for the County of San Diego.

These definitions are an important aspect of a Trail Program and it is critical that the County initiates and establishes a Trail Program in order to continue to provide trails and pathways to satisfy a growing population. It is recommended that definitions of the various components of a trail system become a part of the General Plan or a Trail Master Plan document. Existing trails have been identified and mapped using the GIS system provided by the County and SANDAG. Figure 2-4 shows most existing trails and pathways in the county as well as proposed connections for the candidate regional trails. Figure 2.7 shows the existing and currently planned or proposed candidate regional-type trails only and could be used as the starting point for a county Regional Trail Plan.

The County of San Diego should also establish specific design guidelines for each type of trail and for pathways. An important step is establishing a Trail Master Plan, as many other municipalities have done. A corresponding report should document various design guidelines for the trail types identified on the Master Plan.

2.5.2 Significant Trail User Groups

From a design perspective, there are a number of groups that use non-motorized trails: walkers, hikers, joggers, bicyclists, roller bladers, dog walkers, bird watchers, equestrians and more. Each group has similar needs yet unique interests that must be considered. It is important to understand how the groups' needs relate to each other in order to determine how compatible they are. Trail design guidelines should relate to the user groups for which each trail is intended.

Trail users cannot be easily stereotyped. One common thread amongst the user groups is a desire for a variety of experiences and challenges on the trails. This need may be satisfied in different ways for each group, but in general the County should continue to offer a wide range of trail experiences.

National and state surveys indicate that walking and hiking are the most common and popular activities, followed by bicycling and then horseback riding. The phone survey conducted for the County of San Diego reports similar findings, with 61 percent using trails for hiking, 20 percent for hiking and biking, 15 percent for biking only, and less than 5 percent for horseback riding. The needs of these primary groups are discussed below.

Hikers/Walkers

In local, state, and national surveys hikers/walkers are consistently the largest user group. In San Diego County, hikers account for approximately 60% of the trail users. According to information from the phone surveys and the 1997 population, this would represent nearly 550,000 hikers in San Diego County.

Of all user groups, hikers have the least impact on the trails in terms of wear and tear. Their primary concern is having enough trails and a variety of experiences available and easily accessible. Hikers often enjoy loop trails and the length preferred varies greatly depending upon the time they can spend on the trail and other factors such as weather and location of the trail. Hikers appreciate variety within a trail, which can be achieved by curves and changes in elevation and habitat. Trails for hikers should provide opportunities for lookout points that offer panorama or distant views. Water will typically attract birds and other species so locating trails near or along waterways will offer hikers the ability to observe wildlife. As a general note hikers often prefer a natural trail surface.

Conflict with other users and safety issues associated with multi-use trails is a common concern of hikers. Some hikers in the surveys conducted for this report do not view equestrians or bicyclists as compatible with hiking trails. Hikers find that the bicyclists cause safety concerns along trails that would otherwise provide an enjoyable trail experience for many hikers. Often in San Diego, hikers and equestrians have fewer conflicts than hikers and mountain bikers. Many of the trail organizations in the county contend that all of these users can share the trails without incident.

One specific concern is provision of adequate tread width for the number and type of users expected on the trails. Single-use trails for hikers can be narrower than multi-use trails and the actual tread width varies greatly depending upon the topography and surroundings. The height

clearance for hikers can also be lower than other user groups and may provide a more intimate experience with a different sense of enclosure.

Bicyclists

Bicyclists are actually subdivided into road and trail riders. For the purpose of this assessment, recreational trail riders are considered. These riders can potentially be divided by their purpose on the trail (i.e., long distance mountain bikers, downhill mountain bikers, technical riders) and these subcategories would have different needs and impacts on the trails. Due to the weight of the equipment and potential speed, bicyclists often represent the greatest potential for user conflict. Trails that allow bicyclists must be carefully located and monitored to insure that the local environment and the trail are not severely impacted by heavy use.

Single direction loop or linear trails provide the greatest safety for the bicyclists (Rathke 1997). Many are willing to shuttle vehicles to use high quality linear trails. Preferred trail lengths vary depending upon the skills and expectations of the bicyclists, who travel at average speeds of 8 to 20 miles per hour. User abilities, curves, and slopes in the trails can dramatically influence speeds. If possible it is preferred that steep grades occur on the uphill climbs. Most riders are willing to dismount and push their bikes on uphill sections where grades exceed 15 percent. This is typically not a problem, for most bicyclists will look forward to continuing their ride once reaching the top. It should also be noted that turns should not be located at the end of a downhill section or at the base of a hill. Most bicyclists can cover 10 to 20 miles in a single day, but experienced riders may travel 50 miles or more. The more technical or experienced riders will prefer trails that have plenty of obstacles and challenges.

According to an article in Erosion Control Magazine on multiple-use trails and fire roads (Mitchell, 2001), mountain bikers can be divided into three categories. The “family” or less experienced riders prefer to ride 5 miles or less at a gentle slope of 5-8% maximum. A more intermediate rider is generally looking for a 5- to 12-mile ride with an overall gradient not exceeding 10%. An advanced rider would likely look for a trail 10 to 40 miles in length with sustained grades no steeper than 10%.

When multi-use trails are implemented, a buffer or physical separation between bike trails and hiking/equestrian trails is the preferred solution. When a separate trail is not feasible, a minimum tread width to accommodate shared use should be established. Height clearance is also an important safety consideration for trails intended for bicyclists. In addition, a safe line-of-sight (50-100 feet is accepted minimum) throughout the length of the trail should be maintained wherever bicycle use is permitted, especially if the trail is multi-use. If a safe line-of-

sight cannot be maintained, appropriate signage should provide warning of steep curves and potentially dangerous situations on the trail.

Equestrian

The countywide horse population is estimated to be approximately 64,000 and about half of these are used on public and private trail systems throughout the county. Of this, approximately one-third (10,000) actively uses trails (see Appendix I for the estimate of active trail horses and riders on San Diego County trails).

Long loop or linear trails through a variety of scenery and terrain are appropriate for equestrian users. Equestrians can easily cover 5 to 25 miles in a day and appreciate longer trail opportunities. They tend to prefer unpaved, natural surface trails. The surface should be clear from debris or obstacles for safety reasons. Sufficient cross slope for adequate drainage is important as wet areas and extremely steep slopes can pose difficulties for trail maintenance and should be avoided. Switchbacks and waterbars may be necessary to traverse steep slopes and rest areas or landings should be provided in cases where the slopes are steeper than 5%.

Road crossings should be kept to a minimum. Again tread width is an important consideration for a trail intended for equestrian and other user groups. Whenever trails of adequate continuous tread width are not feasible, passing areas must be incorporated in the trail's design. Any gates used to control trail access must also be wide enough for a packed horse to pass through. As with bicyclists, adequate height clearance is an important safety consideration for equestrians. Equestrians also have a need for more space in a staging or parking area since horses are typically brought by trailers to these sites.

Conflict with bicyclists is a significant concern of many equestrians. Bicyclists can be problematic to equestrians if the horses cannot see the bicyclists or hear them coming down the trail. Horses tend to become easily startled if a bicyclist is upon them quickly, without any advanced noise or visual contact.

Conclusions-Significant Trail User Groups

The ideal way to provide for the needs of the variety of user groups in the county of San Diego would be to offer separate, restricted use trails for each group. These trails provide the most enhanced trail experience for users by minimizing safety concerns and providing for specific needs of the various groups. However, this is often not practical from the standpoint of acquisition of land, trail construction cost, or maintenance and management of the trail system. Although individual restricted use trails might require less resources to construct, long term they

would require additional resources and provide less widespread benefit to the variety of users in the county. **It is therefore recommended that the County plan for multi-use trails in most instances.**

The County should be aware of the ramifications of implementing primarily multi-use trails and should always remain open to opportunities that arise for restricted use trails. For example, in some locations a single-track hiking trail may be easily constructed with minimal cost and impacts and should not be ignored due to the restriction on other users. This is especially important when considering that the needs of hikers can be met fairly easily in that they have little need for significant space for staging areas and minimal needs for tread width, height clearance, and other trail characteristics. It should also be noted that hikers make up the majority of the trail users according to local phone and field surveys and state and national statistics. In some cases trails designed for multi-use would present a less than ideal experience for hikers. There may also be instances when single-track trails appropriate for hikers could go through sensitive ecological land that could not support trails with enough tread width for multiple user groups. In some of the biologically sensitive areas certain user groups, such as equestrians, may even be restricted. In other cases multi-use trails might discourage private, non-profit, or local special-interest funding for single-use trails, such as a bridle trail in a community zoned for horses. **Therefore it is also recommended that single use trails may be more appropriate and feasible and should be considered in some cases as an integral part of a successful trail system.**

Multi-use trails accommodate all non-motorized users. These trails have the opportunity to offer the largest number of users the greatest variety of experience, but must be sensitively designed and carefully and diligently maintained in order to be successful. Whenever multiple uses are allowed, a hierarchy of users should be established and explanatory signs should be posted at trailheads. A typical hierarchy is: bicyclists must yield right-of-way to all other users; runners must yield to hikers and equestrians; hikers must yield to equestrians. As discussed above, tread width, height clearance, and line-of-sight are important considerations for any trail intended for multi-use. Typically, a multi-use trail should be 8 feet-12 feet wide based upon volume of use. See Section 2.6 for additional design guideline considerations.

2.5.3 Trail Length and Type

Based upon input from the surveys, the most desired trail trip is 2-4 miles in length, with many surveyed preferring trails 5 miles or longer. Long loop and long linear trails were the most desired type of trail. Most survey respondents indicate that their needs are currently met by the trails they use, but as the population continues to grow in the county, trails that are "close to

home" and that connect with a Regional Trail System will provide the greatest benefit to the majority of the population.

Conclusions-Trail Length and Type

By linking trails, a variety of trail lengths and types can be easily provided to satisfy the needs of a diverse and growing population. The county should provide trails close to the population to reduce additional traffic on roadways. The majority of the groups surveyed state that they drive to trailheads currently but also seek trails that are more easily accessible.

2.5.4 Trail Settings

Recreation/leisure and health were the primary reasons for trail use for all the groups surveyed. When asked more specifically what features they like about the trails or things that they generally enjoy about the trails they use, most comments from the local surveys include the enjoyment of the open spaces, the rural nature of the trails, the safety associated with trails located away from traffic, and the diverse scenery. Other frequent comments included enjoying peace and quiet and an "escape" from the cities. Convenient access to trails was also mentioned frequently as a feature that people enjoy (see Appendix D, survey results).

Based on the results of the surveys, three types of trails have been identified as providing significantly different settings and therefore different experiences to the users. Design guidelines such as optimum trail route or corridor width and trail surface material could be associated with each of these categories in a similar fashion to guidelines associated with overall trail types discussed in Section 2.5. The three primary trail settings are wilderness, rural, and urban/suburban and each is discussed in more detail below.

Wilderness / Primitive

Trails located in the large open space areas, often located in the more remote regions of the county, would be considered wilderness/primitive trails. These trails are currently found primarily within the state parks and national forests and most of these trails are provided by state and federal agencies. Wilderness trails may also be found in more urban settings, such as MSCP lands.

Wilderness/primitive trails showcase scenic areas and provide a unique and often isolated experience. These trails are often rugged, steep and unimproved. In terms of design criteria, these trails are associated with minimal improvements and narrow tread width. The optimum

general alignment width for these trails is variable and depends upon what is adjacent to individual trail segments.

Rural

Trails that provide the type of setting many users prefer would be considered rural in character. These trails are typically found in outlying scenic areas that are not as pristine as the wilderness/primitive trails. Rural trails also provide a unique and enjoyable recreation experience and are often associated with open space preserves and large undeveloped lands. They pass through the less populated areas of the county and the trail experience includes minimum human contact. Trails through communities such as Ramona, Julian, and Lakeside would be considered rural. The optimum general alignment width for these trails may be up to 100 feet to allow for flexibility in working out the exact location of the planned trail segment.

Urban/Suburban

Although trails in urban and suburban settings may not provide the experience that many users look for, they provide a more easily accessible trail experience and can provide links to rural and even wilderness trails. Urban trails typically include more pathways than others because of more dense existing development. These trails can contribute to an effective alternative transportation network. Urban trails, because of close proximity to dense population, also provide the opportunity for more frequent use of a trail system, which promotes many health benefits. Trails in communities such as Spring Valley could be classified as urban trails.

Urban trails also have an opportunity to showcase cultural resources and to connect residential areas with commercial nodes and recreation areas. These trails are associated with higher levels of human contact and interaction. Opportunities do exist within some urban areas for trails in natural areas, such as along rivers and lakes and through Multiple Species Conservation Program areas. Equestrian opportunities are more limited on urban trails. An optimum general alignment width for these trails would be up to 50 feet to allow enough flexibility to situate the exact trail and provide a landscape buffer for the trail if desired.

Conclusions-Trail Settings

Although many residents seek rural and wilderness trail experiences for recreation purposes, an effective trail system will continue to provide all types of trail experiences. The ability of the County to provide the wilderness trail experience is limited due to the quantity of state and federal land ownership in the most remote areas of the county. Those experiences will continue

to be provided by several state and federal agencies, which allows the County to focus more attention to the provision of rural and urban/suburban trails.

The rural experience should be a priority in undeveloped areas and the County must be proactive about seeking out and preserving those opportunities. The need for urban/suburban trails will continue and their value in linking parks, community facilities, schools, and businesses cannot be underestimated. The value of urban parks in providing convenient trail access for frequent trail use and easy weekday access is also important for the County to consider. What urban trails lack in user experience, they make up for in terms of accessibility for residents wishing to exercise and get more frequent recreation experiences.

Part of the County's responsibility is to recognize what is unique about each setting and to provide appropriate amounts of all trail settings as they have different value to the residents. It is important to retain the variety of settings, which allows the users to choose different experiences at different times. Individual trails should also attempt to take advantage of a variety of experiences. For example, a valley trail could be designed to climb to a vista point for a more wide-ranging experience.

Trail experience as it relates to the types of trails outlined in section 2.5 is another aspect for the County to be aware of. Regional trails often have a better opportunity to provide the wilderness experience while community trails are more likely to provide the urban/suburban and rural experiences. Table 2-17 below illustrates the relationships and the relative likelihood of the trail types to provide the three trail settings described above.

Table 2-17
Trail Types and Settings

Trail Type	Trail Setting		
	Wilderness	Rural	Urban/Suburban
Regional	High	Medium	Low
Community	Low	Medium	High

2.6 DESIGN GUIDELINES

2.6.1 Design Criteria

Design criteria provide specific ways trails should be sited and constructed to provide a safe route of travel for all users. Design criteria should also consider user experience and trail settings. The County currently has existing design criteria but it is not very effective and needs

considerable improvement. The existing criteria are limited because it only provides for one type of trail, does not have sufficient flexibility for trails in varied terrain, and insufficient definitions are outlined. Criteria should take into account all trail definitions, types, preferred lengths, user groups, and trail settings as discussed above. It is common practice to establish a Master Plan and associated design guidelines to create a more cohesive planning tool. The design criteria that should be included within trail guidelines are explained below and other criteria may be developed through the trail master planning process (see Appendix J for typical design guidelines from other municipalities).

Americans with Disabilities Act (ADA)

Where it is feasible the design of trails should recognize the intent of the Americans with Disabilities Act (ADA) and should emphasize accessibility for all. The ADA is a federal legislation aimed at providing disabled Americans with equal opportunity and reasonable access to commercial and public facilities.

The ADA currently requires that accessible parking spaces be provided in a certain proportion to the total number of parking spaces provided for public facilities, which affects staging areas for trails. An accessible path of travel is also required from the parking lot to public facilities, such as restrooms, and to the trailhead. In general, failure to comply with the provisions of the ADA can result in lawsuits.

All new improvements are required to be ADA compliant when constructed. New regulations are pending regarding older existing facilities. Many caveats exist for circumstances such as budget and "undue hardship," but these are mainly focused on retrofitting of buildings. In general, cities and counties should make every effort to bring all public facilities up to ADA standards.

The Architectural and Transportation Barriers Compliance Board (Access Board) is responsible for developing accessibility guidelines under the ADA to ensure that new construction and alterations of facilities covered by titles II and III of the ADA are readily accessible to and usable by individuals with disabilities. Under the ADA, the Department of Justice is responsible for issuing regulations to implement titles II and III of the Act. Due to the unique features of many recreation facilities, the Access Board formed a committee in 1997 to examine accessibility to outdoor recreation facilities. Following a series of meetings and workshops over two years, the committee reached consensus on the accessibility guidelines for newly constructed and altered outdoor developed areas covered by the ADA. The result is a report, released in March of 2000, which proposes accessibility guidelines for a wide variety of recreation facilities, including trails.

The outdoor accessibility report includes detailed technical provisions (design guidelines) and also outlines conditions that permit departures from the recommended design guidelines. Specific guidelines are recommended for:

- Trail surface
- Clear tread width
- Openings in trail surfaces
- Vertical clearance
- Tread obstacles
- Passing space
- Cross slope and running slope
- Resting intervals
- Edge protection
- Signage

Conditions for exclusion include instances where compliance would:

- Cause substantial harm to cultural, historic, religious, or significant natural features or characteristics;
- Substantially alter the nature of the setting or the purpose of the facility, or portion of the facility;
- Require construction methods or materials that are prohibited by Federal, State, or local regulations or statutes;
- Not be feasible due to terrain or the prevailing construction practices.

In addition, the difference between maintenance and alterations is outlined in the report and routine or periodic maintenance of existing trails or trail segments is exempt from the design guidelines proposed.

The outdoor accessibility report is currently undergoing a regulatory assessment and public review. The final outcome and resulting rules are not yet known and the County should stay abreast of the report's development throughout the trail planning process to determine the final affect on trail construction in the county. The outdoor accessibility report is being reviewed at the federal level and could potentially add to or in some ways modify the accessibility requirements for outdoor recreation facilities. For the specific requirements that should be taken into consideration as trail planning efforts continue, the proposed trail guidelines are provided in Appendix K.

Tread Width

Tread width should be determined by the type and intensity of trail use and field conditions such as topography and vegetation. Wherever narrow treads (5 feet or less) are necessary, passing areas should be provided at regular intervals. Trail type (regional vs. community) should also guide establishment of tread width guidelines, as should the types of users expected on the trail.

Clearing Width/Vegetation Clearance

Clearing width is the minimum horizontal clearance between the outer edge of a trail and physical obstructions. This width would vary based upon the type of trail but should generally be a minimum of 2 feet. A vertical clearance from overhanging branches or fixed structures should also be established and can vary based upon the trail type and user groups anticipated. Trails that allow equestrians and/or bicycles should maintain a minimum vertical clearance of 10 feet, while trails for hikers only can reduce the clearance.

Grade Limits

Grades along trails should be kept to a minimum, as topography permits. Terrain and special conditions of the areas surrounding the trail route should be considered, as the trail alignment is determined. Grades of 10 percent or less are preferred but may not be feasible in some locations. Where grades exceed 10 percent, long, gradual switchbacks should be used. Rest areas or landings should be provided when grades exceed 5%. Waterbars can also help trails to achieve more significant grade changes but should be used cautiously with certain user groups such as bicyclists. The County may wish to consider varying the guidelines for grade limits with the trail settings. For example, some rural or wilderness trails might be steeper and narrower than typical accepted standard guidelines in order to provide a different experience for users.

Trail Surfaces

Trail surface should be appropriate to the intended use and should be selected so as to minimize runoff and erosion problems. Ideally, surfaces should allow for a variety of recreational uses and should be easily maintained. Wherever feasible, trails should be of materials that provide a firm, smooth surface meeting requirements and guidelines of the ADA.

The County generally accepts compacted decomposed granite (D.G.) as a typical trail surface material. Native soil may also be appropriate in some cases if it can be demonstrated to have acceptable standards to provide a firm, smooth surface.

Sight Distance

For safety purposes, the clear width of any multi-use trail that allows bicycle use should be developed to allow a 100-foot average site distance, based upon accepted guidelines in use by other municipalities. If sight distances on curves, around hills or through densely vegetated areas are less than 100 feet, safety signs and reduced speed limits should be required.

Grading and Drainage

In general, no large-scale grading should be used for trail construction. Cuts or berms needed should be contoured to blend with the natural slopes. Disturbance of the soil surface should be minimized in order to reduce erosion and associated maintenance problems. Any cut or fill slopes should be immediately replanted or reseeded with vegetation native to the general area to assist with soil stabilization. Trail designs should comply with current County drainage and storm water pollution standards. Surface water should be diverted from trails by maintaining a minimum 2 percent cross slope across the trail tread.

Erosion control is of the utmost importance in trail design, especially for soft-surface, multi-use trails. Water bars, level breaks constructed with wooden or rubber members laid perpendicular to the path of travel, may be needed to allow trails to climb through steeper terrain. At least one water bar per 100 feet of trail is recommended when slopes are 10% or greater (Mitchell 2001). It is important to factor maintenance related to trails into any trail planning efforts, especially for erosion prevention but also for safety, aesthetic, and environmental reasons. Trails that are designed for multiple user groups may need additional maintenance attention due to higher use and potential for higher levels of erosion and associated runoff and siltation.

Trail Structures

Standards for drainage crossings, trail bridges, and hardware for construction should be addressed. Trails crossing creeks and drainages may require a bridge or culvert and these structures should be carefully designed to minimize disturbance and the number of crossings should be kept to a minimum. Approaches to bridges should be a minimum of 100 feet in length level and straight. Bridge widths should correspond to established tread width for the various trail types. Bridges should also be carefully designed to meet the needs and weight of horse travel or even maintenance vehicles and include railing when necessary. High and narrow bridges may scare some animals. If wood members are used for bridge crossings the planks should be oriented at 45 to 90 degree angles to the direction of travel. Gaps between planking oriented in the direction of travel may trap bicycle tires and cause injury to cyclists. All trail

structures should be as vandal-proof as possible and rounded framing members and recessed bolt heads and hardware should be specified for safety.

Access and Safety Barriers

Structures such as bollards, boulders, and logs should be used to prevent motorized vehicles from entering routes at any trail staging area and at any crossing of a public road right-of-way. Safety barriers and/or barrier plantings should be provided to protect pathways along heavily traveled routes.

Signage

Several types of signs should be considered for use and design guidelines should be developed for each type used within the trail system.

Identity signs should be located at all staging areas, at regional trail intersections, and at intersections with roadways and should include the trail name at a minimum. They may also include distance to intersections with other trails, other parks or points of interest along the trail. Signs outlining the intended trail users, basic trail rules, litter control, accessibility conditions and other ADA related information, and any special land use considerations should be located at the same places as the identity signs.

Safety signs include warnings about blind curves, street crossings, wildlife danger, and fire season restrictions and should be located on an as-needed basis.

Private property signs should be posted at regular intervals to remind users of trespassing laws.

Interpretive signs for natural resources and other points of interest could also be included along trails and should follow an established standard.

Trail restriction signs would be for "Limited Use" trails and would require posting to identify allowed user types.

Trail Support Facilities

Support facilities for trails vary with the intended use of the trail and the trail type. The approach to planning trail support facilities will vary for regional and community trails as discussed below. Staging areas may include amenities such as restrooms, parking lots, water fountains, waste receptacles, benches, picnic tables, and emergency telephones. The majority of trail users

surveyed in the county stated that trailheads are sufficient for their needs, but they also desire these amenities.

Regional

As a Regional Trail Plan is established, the County should also plan for reasonable locations for staging areas for accessing the regional trails. There are no numerical standards that relate to the number of staging areas needed per trail quantities. It is simply necessary to plan the staging areas along with the trail locations, to build them incrementally as trail use increases, and to monitor demand and use and make adjustments to the planned locations as necessary. In some instances it may be possible to plan for shared use of an existing facility, such as a college campus' parking lot, for use as a regional trail staging area, but in other cases the County will need to provide a separate staging area for the trails. Primary considerations for these staging areas for regional trails are:

- **Accessibility** - Staging areas for regional trails should be easily accessible for a substantial number of residents. For this reason, locating staging areas on major arterial roads or near freeways is recommended. Locations for staging areas should also be carefully planned to avoid potential conflict with residential areas. This can be accomplished by placing them where higher traffic volumes for the staging area would not directly impact the local residents. The County should also explore the possibility of utilizing community colleges or other semi-public facilities with large parking areas for staging areas. Coordination would be necessary to insure that peak trail use times would not conflict with normal use of the facility.

- **Size** - The size of staging areas should be determined based upon the potential quantity of use, which relates to the quantity of trails and potential links that can be accessed from any given point along the trail. The type of user should also be accounted for when planning the size of the staging areas. For example, equestrian users often seek a large gravel parking lot as a staging area while hikers and bikers may prefer smaller paved parking lots.

- **Amenities** - Staging areas for regional trails should include restrooms, parking lots, water fountains, waste receptacles, benches, picnic tables, and emergency telephones. As it is anticipated that these trails will be more heavily used, the County should provide more amenities and should be prepared for the volume of use in all aspects of planning the staging areas for regional trails.

Community

Local staging areas for community trails can be approached differently than for regional trails. In some cases it can be anticipated that community trails will not need staging areas at all as they would be the "close-in" trails used primarily by local neighborhoods. Trail users who could walk or ride directly to the trailhead would access these trails. If needed, a community staging area can often share the facilities provided by existing local parks or community semi-public or public facilities like schools. This is particularly useful when these areas provide the necessary parking for trail users. If these shared facilities are used, the staging areas should not conflict with the existing use. Where staging areas or trailheads are provided they should include a minimum of amenities. Features such as waste receptacles and trail signs should always be provided and other elements should be added as needed or suggested by the community members.

Easement Width and Setback from Roadway

For safety reasons, pathways (located within road right-of-way) should be separated from the traveled portion of roadways whenever possible. A setback of 5 feet minimum is recommended between the outer edge of the roadway and the edge of the pathway. When pathways are directly adjacent to the roadway, a minimum easement width of 10 feet to 12 feet should be provided. Whenever possible, pathways should be located as far away as possible from the traveled portion of the roadway, preferably along and parallel to the right-of-way edge.

Conclusions-Design Criteria

Trail policies should be included in the County's General Plan 2020. When a Trail Master Plan is established, in whatever form or document the County determines will best serve future trail planning efforts, it should include a design guidelines manual or section that provides design criteria for the various trail categories identified on the plan.

All trails should have design guidelines established for tread width, grading and drainage, clearing width and height, acceptable sight distance, allowable trail surface materials, access and safety, and signage. Additional guidelines for regional trails should include adequate staging areas and support facilities. Community trails, on the other hand, might be best served by connecting to existing parks, schools, and local business districts for many support facilities needed.

Many public parks provide parking lots, restrooms, water fountains, and other facilities that could be utilized by trail users. In some cases, expansion of existing facilities at public parks

would need to occur if intense use of a new trails burdens existing facilities. Any new trails that do not connect to these existing facilities must include the cost of needed support facilities in the development cost and should consider additional maintenance and management involved with new facilities. Parking would be necessary to adequately service regional trails but many community trails would be accessed by the local community directly and therefore would not require additional parking areas.

As more specific locations and guidelines for the future trail segments in the county are determined, the intended user groups should be considered as an integral part of the planning process. As discussed in section 2.5.2, the primary user groups have some similar needs but also somewhat unique needs that the County should attempt to provide for. There is great variability in the types of trail users, the reasons they seek out trails, and the types of experiences they are seeking. Table 2-18 provides a summary of trail experiences defined in terms of a combination of activity, setting, and experience attributes. It must be noted that it is impossible to easily and concisely summarize the needs of the diverse trail users in the county of San Diego. This table merely attempts to simplify the variety of opinions in order to identify some design criteria that should be analyzed as the trail planning process continues.

In summary, in order to manage, operate, and maintain a cohesive trail system, the County must have design guidelines that can be referenced when trails are being proposed and when new trails are being constructed. It is imperative that the County considers significant user groups and adopts new criteria as it becomes available. ADA guidelines will also play a role in trail planning and design and the County will need to take these guidelines into consideration. The County will also need to include the means to enforce the implementation of these guidelines. Trails constructed in accord with thoughtful design guidelines should streamline the maintenance and operations process. Properly constructed trails require less maintenance and if many of the trail amenities are standardized, trail maintenance can be accomplished more efficiently.

2.7 RECOMMENDATIONS

The following is a list of goals and recommendations that are based on this Public Needs Assessment:

1. Establish a Trail Master Plan, preferably within the General Plan or with strong supporting policies within the General Plan.

    - A Regional Trail Plan based on *connectivity* rather than miles is recommended (see Figure 2-7 for Preliminary Regional Trail Plan).

Table 2-18 - Typical Trail Characteristics and Settings

Characteristics	Settings		
	Wilderness / Primitive	**Rural**	**Urban / Suburban**
Typical Trail Users/ Activities	• Mountain bicycling • Hiking • Horseback riding	Based on trail surface type and topography: • Road or mountain bicycling • Jogging / hiking / strolling • Wheelchair use • Horseback riding	Virtually all types of trail use may occur simultaneously: • Road, mountain, or tandem bicycling • Roller blading • Skateboarding • Running / jogging / hiking / walking • Wheelchair use • Horseback riding (limited)
General Trail Type	• Hiking and equestrian trail	• Double-track , natural surface trail (fire road) • Single-track, natural surface trail	• Multi-Use Pathway or Trail (typical) • Separate trails in heavy use areas for hikers and equestrians
Typical Trail Width	• 6’ optimum (4’ minimum)	• 4’ to 12’ based on level of use and topography	• Pathways and multi-use trails: 8’ to 12’ based on use and topography • Single-use trails: 4’ to 8’ based on use and topography
Trail Amenities	Few: • Use and management information signs at trail staging areas • Directional signs along trail	Minimal to relatively convenient: • Drinking water may be at designated staging areas • Restrooms may be at designated staging areas • Benches may be present • Use and management information signs at trail staging areas • Directional signs along trail	Convenient: • Drinking water at staging areas and along trail • Restrooms and emergency telephones at staging areas • Benches along trail • Opportunities along trail for group use (outdoor education stations, picnic tables, etc) • Use and management information signs at trail staging areas and along trail • Directional signs along trail • Interpretive facilities
Trail Setting Characteristics	• Essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal.	• May include somewhat modified natural environment. Sights and sounds of humans may be present. Interaction between users is typically moderate to high. Support facilities are common.	• Substantially urban environment although backdrop may have naturally appearing elements. Sights and sounds of humans may predominate. Large numbers of users can be present at one time. Support facilities are common.
Trail Experience	• High probability of experiencing isolation from sights and sounds of humans, independence, closeness to nature, self-reliance in environment that offers a high degree of challenge. Testing and practice of trail skills challenged by environment.	• About equal probability for experience with other user groups and for isolation from sites and sound of humans. Opportunity to have a high degree of interaction with the natural environment.	• Probability for experience with individuals and groups is prevalent as is convenience of trail opportunities for a variety of benefits. The sense of risk requiring trail skills related to the natural environment is relatively unimportant.

- Community trail maps should be sub-elements of a county Trail Master Plan and should be prepared based upon the input and interest of the individual Community Planning or Sponsor Groups. It is recommended that the County use the population-oriented baseline of 0.84 miles/1000 residents as a **guide** to establish the quantity of future community trails that the County will aim to satisfy. Other Community related factors should be considered as a part of the process in order to assist the County in prioritizing community trail implementation efforts.

- Maintain the Trail Master Plans as the basis for future planning, coordination, and implementation of a countywide trail system.

- Clearly define trail types (Pathways, Regional and Community Trails) and provide trail guidelines for future trail needs. Definitions and design guidelines should become an element of the Trail Master Plan or be incorporated into the General Plan.

2. Successfully implement the Trail Master Plan in a manner that reflects current and future population patterns and the needs of residents of the unincorporated region of the county of San Diego.

3. Clearly define a survey process and continue to survey the communities on a regular basis (every 5 years is recommended) to confirm and update future trail needs.

4. Continue to establish the benefits of trails to support future trail implementation and nexus opportunities.

5. Continue to provide and expand the variety of trail experiences within the County Trail System, including urban/suburban, rural, and wilderness trails as well as a range of trip length opportunities.

6. Provide adequate support facilities and staging areas that will sustain existing and future trail implementation.

7. Provide the necessary resources for a successful Trail Program. Financial and human resources are necessary in order to provide for the maintenance and management of existing trails as well as planning for future trail acquisition, construction, and management.

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